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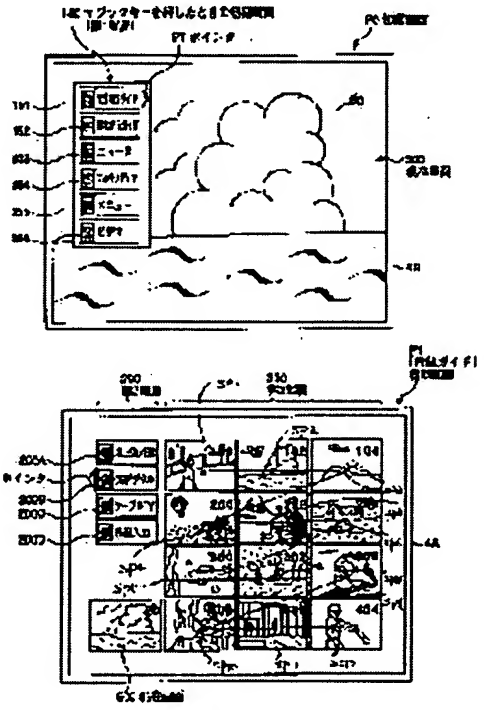
(54) ELECTRONIC DEVICE, FUNCTION OPERATING METHOD IN ELECTRONIC DEVICE, AND MEDIUM STORING EXECUTABLE PROGRAM IN ELECTRONIC DEVICE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a electronic device which allows a user to easily grasp the structure of the entire hierarchy of broadcasting programs, selects the content of a desired broadcasting program to be seen and easily performs the operation, a function operating method in the electronic device and a medium that stores a program which can be parried out by the electronic device.
SOLUTION: This device is provided with a displaying means that has a screen and a hierarchy selecting means which can show a layered 1st hierarchy 150 that includes a selection item which corresponds to a broadcasting program that is to be shown on the displaying means 4 and simultaneously shows a 2nd hierarchy 200 that consists of plural broadcasting media categories corresponding to selected selection items of the hierarchy 150 and a 3rd hierarchy 300 which comprises reduced images showing plural contents that correspond to the broadcasting media categories that are selected in the hierarchy 200 in place of the display of the hierarchy 150 in the displaying means 4 when a selection item that corresponds to a guide function of a broadcasting program of the hierarchy 150 is selected.



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CLAIMS

[Claim(s)]

[Claim 1] If the 1st hierarchized hierarchy containing the selections corresponding to the guide function of the program which it is going to display on a display means to have a screen, and this display means can be displayed and the selections corresponding to the guide function of the 1st hierarchy's program are chosen With the 2nd hierarchy constituted by the category of two or more broadcast media corresponding to the 1st hierarchy's selections replaced with and chosen as the 1st hierarchy's display Electronic equipment characterized by having the hierarchy selection means who displays on coincidence the 3rd hierarchy constituted by the reduced screen which shows two or more contents corresponding to the category of the broadcast media chosen in the 2nd hierarchy in a display means.

[Claim 2] Endless scrolling of the inside of the contents in the 3rd hierarchy is carried out at a zigzag mold, and it is selectable electronic equipment according to claim 1 about desired contents.

[Claim 3] When the 1st hierarchy can superimpose and display on the image currently actually displayed on the display means, it replaces with the 1st hierarchy and the 2nd hierarchy and the 3rd hierarchy are displayed Electronic equipment according to claim 1 to which a part of the selected reduced screen is expanded when the preliminary decision of the selection of the reduced screen of the contents which reduced the image currently separately displayed on the display means actually to a part of display means, displayed, and were chosen is carried out.

[Claim 4] A hierarchy selection means is electronic equipment according to claim 1 by which the migration display direction directions mark which shows the direction which can be made to move with directions of a user between the 1st hierarchy, the 2nd hierarchy, and the 3rd hierarchy, and moves is displayed on a display means.

[Claim 5] The 1st hierarchical display step which displays the 1st hierarchized hierarchy who contains the selections corresponding to the guide function of the program which it is going to display in a display means, If the selections corresponding to the guide function of the 1st hierarchy's program are chosen With the 2nd hierarchy constituted by the category of two or more broadcast media which replace with the 1st hierarchy's display and correspond to the selections corresponding to the guide function of the 1st hierarchy's program Functional operating instructions in the electronic equipment characterized by the 3rd hierarchy constituted by the reduced screen

which shows two or more contents corresponding to the category of the broadcast media chosen in the 2nd hierarchy having the 2nd hierarchy and the 3rd hierarchy coincidence display step which are displayed on coincidence in a display means.
[Claim 6] Functional operating instructions [in / a zigzag mold carries out endless scrolling of the inside of the contents in the 3rd hierarchy, and / for desired contents / selectable electronic equipment according to claim 5].
[Claim 7] When the 1st hierarchy can superimpose and display on the image currently actually displayed on the display means, it replaces with the 1st hierarchy and the 2nd hierarchy and the 3rd hierarchy are displayed Functional operating instructions in the electronic equipment according to claim 4 to which a part of the selected reduced screen is expanded when the preliminary decision of the selection of the reduced screen of the contents which reduced the image currently separately displayed on the display means actually to a part of display means,. displayed, and were chosen is carried out.
[Claim 8] The 1st hierarchical display step which displays the 1st hierarchized hierarchy who contains the selections corresponding to the guide function of the program which it is going to display in a display means, If the selections corresponding to the guide function of the 1st hierarchy's program are chosen With the 2nd hierarchy constituted by the category of two or more broadcast media which replace with the 1st hierarchy's display and correspond to the selections corresponding to the guide function of the 1st hierarchy's program The 2nd hierarchy and the 3rd hierarchy coincidence display step as which the 3rd hierarchy constituted by the reduced screen which shows two or more contents corresponding to the category of the broadcast media chosen in the 2nd hierarchy is displayed on coincidence in a display means, The medium by which the program which can be performed was stored in the electronic equipment characterized by ****(ing).

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the medium by which the program which can be executed was stored in the functional operating instructions in electronic equipment, such as for example, a television set, a monitoring device, and a computer, and electronic equipment, and electronic equipment.
[0002]
[Description of the Prior Art] In recent years, a television broadcasting signal is digitized and transmitted through satellites, such as a broadcasting satellite and a communication satellite, and the system which receives this is employed at each home. In this system, since it is possible to secure about 80 channel, very many kinds of programs can be broadcast, for example. In such a

system, since the number of the programs which can be transmitted increases, it is possible to transmit the electronic program guide (EPG:Electronic Program Guide: to also call it program related information) for choosing a desired program with a program, to display this in a monitoring device, and to choose a desired program quickly certainly using the displayed electronic program guide. GUI (Graphical User Interface) is used on a display, and a user grasps a desired program quickly and proper, and can make it possible to choose it using the displayed electronic program guide.

[0003] in order that for example, a television set (television receiver) may attain multi-functionalization more as electronic equipment -- the contents of a program of varieties -- or the demand of multi-functionalization, such as displaying the multimedia function using a communication network, has been increasing. And in the screen of a television set, arranging two or more programs in the shape of a matrix, and displaying them is proposed. In such a television set, when a user operates the carbon button of a remote commander, it switches to the display hierarchy who has the reduced screen which displays two or more contents of a program from an initial screen, and the method which is choosing one from the screens of two or more of the contents of a program when a user's operates the key of a remote commander, and displays the contents of a program all over a screen can be considered.

[0004]

[Problem(s) to be Solved by the Invention] However, in this way, when a favorite program tends to be chosen from many programs and you are going to watch it in the display screen of a television receiver From the initial screen which is the 1st hierarchy, it switches and displays on two or more reduced screens which display two or more contents of a program which are the 2nd hierarchy when a user presses the key of a remote commander. And one in the contents of a program expressed with two or more reduced screens of the 2nd hierarchy by a user operating the key of a remote commander further is chosen, and when the method which makes the 3rd hierarchy the one selected contents of a program, and displays them all over the display screen is adopted, there are the following problems. That is, since the 2nd hierarchy is displayed after the 1st hierarchy disappears, and the 3rd hierarchy is displayed after the 2nd hierarchy disappears It is hard to grasp the structure of the 1st hierarchy, the 2nd hierarchy, and the 3rd hierarchy, and it is necessary to change a hierarchy in order of the 1st hierarchy, the 2nd hierarchy, and the 3rd hierarchy, or to change a hierarchy in order of the 3rd hierarchy, the 2nd hierarchy, and the 1st hierarchy conversely for a user. That is, after expanding and checking the contents of a program which the user chose on the 3rd hierarchy, in order to enable it to display another contents of a program to choose finally to the limit [the 3rd hierarchy] of a screen, it is necessary to repeat repeatedly switch actuation of the 1st hierarchy thru/or the 3rd hierarchy, and the actuation is complicated. Then, this invention cancels the above-mentioned technical problem, a user can grasp structure of the whole hierarchy of a program easily, and can choose and see the contents of a desired program, and it aims at offer the medium by which the program which can be perform was stored in the functional operating instructions in the electronic equipment and electronic equipment which can perform the actuation easily, and electronic equipment.

[0005]

[Means for Solving the Problem] If the above-mentioned purpose is in this invention, the 1st hierarchized hierarchy containing the selections corresponding to the guide function of the program which it is going to display on a display means to have a screen, and this display means can be displayed. If the selections corresponding to the guide function of the 1st hierarchy's program are chosen With the 2nd hierarchy constituted by the category of two or more broadcast media corresponding to the 1st hierarchy's selections replaced with and chosen as the 1st hierarchy's display It is attained by the electronic equipment characterized by having the hierarchy selection means who displays on coincidence the 3rd hierarchy constituted by the reduced screen which shows two or more contents corresponding to the category of the broadcast media chosen in the 2nd hierarchy in a display means.

[0006] In this invention, a hierarchy selection means displays the 1st hierarchized hierarchy containing the selections corresponding to the guide function of the program which it is going to display on the screen of a display means. When the selections corresponding to the guide function of the 1st hierarchy's program are chosen, and a hierarchy selection means It replaces with the 1st hierarchy's display. In the screen of a display means The 3rd hierarchy constituted by the reduced screen which shows two or more contents corresponding to the category of the broadcast media chosen in the 2nd hierarchy constituted by the category of two or more broadcast media corresponding to the 1st hierarchy's selected selections and the 2nd hierarchy is displayed on coincidence. Since a user replaces with the 1st hierarchy's display and can display the 2nd hierarchy and the 3rd hierarchy on coincidence on the screen of a display means with a hierarchy selection means by this when he displays the 1st hierarchy, and the 2nd hierarchy and the 3rd hierarchy, a user can grasp easily the layered structure of the 1st hierarchy about a program, the 2nd hierarchy, and the 3rd hierarchy. And since it replaces with the 1st hierarchy and two hierarchies', the 2nd hierarchy and the 3rd hierarchy, contents can be displayed on coincidence in the screen of a display means, a user is simple for grasp of the contents of the 2nd hierarchy and the 3rd hierarchy, and selection of the contents of the program by the user becomes easy.
[0007] In this invention, if endless scrolling of the inside of the contents in the 3rd hierarchy is carried out preferably at a zigzag mold and it enables it to choose desired contents, a user can choose the contents of a desired program in the 3rd hierarchy by simple actuation easily. The image currently separately shown by the display means actually for a part of display means when superimpose on the image with which the 1st hierarchy is preferably displayed on the display means actually in this invention, it can display, it replaces with the 1st hierarchy and the 2nd hierarchy and the 3rd hierarchy are displayed can be reduced, and it can display. And if a little reduced screen of contents is expanded and displayed, the selected reduced screen is legible. It can see, even if the contents of the image currently actually displayed on the display means by this are also choosing contents. By displaying the migration display direction directions mark which shows the direction to which a hierarchy selection means can move between the 1st hierarchy, the 2nd hierarchy, and the 3rd hierarchy with directions of a user, and moves preferably in this invention on a display means A user can carry out easily only by moving the selection in the 1st hierarchy or the 2nd hierarchy, and the 3rd hierarchy, and migration between those hierarchies along with the migration display direction directions mark.
[0008] The 1st hierarchical display step which displays the 1st hierarchized hierarchy who contains the selections corresponding to the guide function of the program which it is going to display in a display means if the above-mentioned purpose is in this invention, If the selections corresponding to the guide function of the 1st hierarchy's program are chosen With the 2nd hierarchy constituted by the category of two or more broadcast media which replace with the 1st hierarchy's display and correspond to the selections corresponding to the guide function of the 1st hierarchy's program The 2nd hierarchy and the 3rd hierarchy coincidence display step as which the 3rd hierarchy constituted by the reduced screen which shows two or more contents corresponding to the category of the broadcast media chosen in the 2nd hierarchy is displayed on coincidence in a display means, It is attained on the functional operating instructions in the electronic equipment characterized by **** (ing).
[0009] Since it replaces with the 1st hierarchy's display and the 2nd hierarchy and the 3rd hierarchy can be displayed on coincidence on the screen of a display means by this when a user displays the 1st hierarchy, and the 2nd hierarchy and the 3rd hierarchy, a user can grasp easily the layered structure of the 1st hierarchy about a program, the 2nd hierarchy, and the 3rd hierarchy. And since it replaces with the 1st hierarchy and two hierarchies', the 2nd hierarchy and the 3rd hierarchy, contents can be displayed on coincidence in the screen of a display means, a user is simple for grasp of the contents of the 2nd hierarchy and the 3rd hierarchy, and selection of the contents of the program by the user becomes easy.

[0010] In this invention, if endless scrolling of the inside of the contents in the 3rd hierarchy is carried out preferably at a zigzag mold and it enables it to choose desired contents, a user can choose the contents of a desired program in the 3rd hierarchy by simple actuation easily. The image currently separately shown by the display means actually for a part of display means when superimpose on the image with which the 1st hierarchy is preferably displayed on the display means actually in this invention, it can display, it replaces with the 1st hierarchy and the 2nd hierarchy and the 3rd hierarchy are displayed can be reduced, and it can display. It can see, even if the contents of the image currently actually displayed on the display means by this are also choosing contents. By displaying the migration display direction directions mark which shows the direction to which a hierarchy selection means can move between the 1st hierarchy, the 2nd hierarchy, and the 3rd hierarchy with directions of a user, and moves preferably in this invention on a display means A user can carry out easily only by moving the selection in the 1st hierarchy or the 2nd hierarchy, and the 3rd hierarchy, and migration between those hierarchies along with the migration display direction directions mark.

[0011] The 1st hierarchical display step which displays the 1st hierarchized hierarchy who contains the selections corresponding to the guide function of the program which it is going to display in a display means if the above-mentioned purpose is in this invention, If the selections corresponding to the guide function of the 1st hierarchy's program are chosen With the 2nd hierarchy constituted by the category of two or more broadcast media which replace with the 1st hierarchy's display and correspond to the selections corresponding to the guide function of the 1st hierarchy's program The 2nd hierarchy and the 3rd hierarchy coincidence display step as which the 3rd hierarchy constituted by the reduced screen which shows two or more contents corresponding to the category of the broadcast media chosen in the 2nd hierarchy is displayed on coincidence in a display means, It is attained by the medium by which the program which can be performed was stored in the electronic equipment characterized by ****(ing).

[0012] Since it replaces with the 1st hierarchy's display and the 2nd hierarchy and the 3rd hierarchy can be displayed on coincidence on the screen of a display means by this when a user displays the 1st hierarchy, and the 2nd hierarchy and the 3rd hierarchy, a user can grasp easily the layered structure of the 1st hierarchy about a program, the 2nd hierarchy, and the 3rd hierarchy. And since it replaces with the 1st hierarchy and two hierarchies', the 2nd hierarchy and the 3rd hierarchy, contents can be displayed on coincidence in the screen of a display means, a user is simple for grasp of the contents of the 2nd hierarchy and the 3rd hierarchy, and selection of the contents of the program by the user becomes easy.

[0013] In this invention, if zigzag endless scrolling of the inside of the contents in the 3rd hierarchy is carried out preferably and it enables it to choose desired contents, a user can choose the contents of a desired program in the 3rd hierarchy by simple actuation easily. The image currently separately shown by the display means actually for a part of display means when superimpose on the image with which the 1st hierarchy is preferably displayed on the display means actually in this invention, it can display, it replaces with the 1st hierarchy and the 2nd hierarchy and the 3rd hierarchy are displayed can be reduced, and it can display. It can see, even if the contents of the image currently actually displayed on the display means by this are also choosing contents. By displaying the migration display direction directions mark which shows the direction to which a hierarchy selection means can move between the 1st hierarchy, the 2nd hierarchy, and the 3rd hierarchy with directions of a user, and moves preferably in this invention on a display means A user can carry out easily only by moving the selection in the 1st hierarchy or the 2nd hierarchy, and the 3rd hierarchy, and migration between those hierarchies along with the migration display direction directions mark.

[0014]

[Embodiment of the Invention] Hereafter, the gestalt of suitable operation of this invention is explained to a detail based on an accompanying drawing. In addition, since the gestalt of the

operation described below is the suitable example of this invention, desirable various limitation is attached technically, but especially the range of this invention is not restricted to these gestalten, as long as there is no publication of the purport which limits this invention in the following explanation.

[0015] Drawing 1 and drawing 2 show the gestalt of desirable operation of the electronic equipment of this invention, and this electronic equipment 10 constitutes some digital-satellite-broadcasting systems, as shown in drawing 7 . In drawing 1 and drawing 2 , this electronic equipment 10 has the monitoring device 4 as a display means, the hierarchy selection means 100, a parabolic antenna 3, etc. roughly. The monitoring device 4 as a display means is a display equipped with a cathode-ray tube (CRT). However, not only an indicating equipment equipped with a cathode-ray tube but, of course, this monitoring device 4 can adopt a liquid crystal display and an indicating equipment like a plasma display device. As this electronic equipment 10 was mentioned above, some digital-satellite-broadcasting systems are constituted, and a parabolic antenna 3 receives the electric wave transmitted from the sending set 130 through a satellite (a broadcasting satellite or communication satellite) as shown in drawing 7 . The input signal RS received with the parabolic antenna 3 is supplied to IRD (Integrated Receiver/Decoder)2 of the hierarchy selection means 100.

[0016] The hierarchy selection means 100 has the remote commander 5 with this IRD2 preferably. This remote commander 5 can input a command to a remote commander 5 with an infrared (IR:Infrared) signal. By pressing the key of the arbitration of the key groups which a user (user) describes after a remote commander 5, it is discharged from IR dispatch section 51, and the infrared signal IR corresponding to the function of the key is received in the IR receive section 39 of IRD2. IRD2 is electrically connected by Rhine 11 to transceiver section 4A of a monitoring device 4.

[0017] Next, with reference to drawing 3 , the control unit 101 prepared in IRD2 shown in drawing 1 and drawing 2 is explained. This control unit 101 is formed in the front-face side of IRD2, and has the "top" key 102, the "right" key 103, the "left" key 104, the "bottom" key 105, "decision" key 106, and the "Magic" key 107. By preparing these keys in IRD2, a user can operate selection of a television broadcasting program etc., its selected decision of the contents, etc. in a monitoring device 4.

[0018] Next, the remote commander 5 of drawing 1 is explained with reference to drawing 4 thru/or drawing 6 . a remote commander 5 -- body 5A, IR dispatch section 51, volume (VOL) key 5B, program (PROG) key 5C, mute (MUTE) key 5D, and input (INPUT) key 5E, power (POWER) key 5F, and jump (JUMP) key 5G -- active (ACTIVE) -- it has key 5H and twin (TWIN) key 5I, numerical-keypad 5J, and control unit 5K. These control unit 5K are equipped with some keys other than the key to which 101 has IRD2 of drawing 3 . control unit 5K are shown in drawing 4 and drawing 6 -- as -- the "top" key 102, the "right" key 103, the "left" key 104, the "bottom" key 105, "decision" key 106, the "Magic" key 107, the "menu" key 108, the "multimedia" key 109, the "news" key 110, and the "program guide" key 111 -- and -- "-- it has the guide" key 112, looking at.

[0019] The light emitting diode (LED) 76 of IR dispatch section 51 of the remote commander 5 of drawing 5 is driven by the LED driver 75. LED76 sends out IR dispatch signal for the signal corresponding to the function of the key by a microcomputer's 71 distinguishing the key which a user chooses from the key groups 82, and sending a signal to the LED driver 75 so that it may correspond to the key.

[0020] Next, with reference to drawing 7 , the example of a configuration of the electronic equipment 10 mentioned above etc. is explained. As shown in drawing 7 , electronic equipment 10 can be used as a device for receiving digital satellite broadcasting. The sending set 130 has program sending-out system 130A, and an MPEG 2 encoder / multiplexer control-system 130B. This program sending-out system 130A collects the audio-visual data streams which are the image information on the program of two or more classes offered by two or more program providers, and supplies them to control-system 130B. The data compression of the control-system 130B is carried out by MPEG (Moving Picture Experts Group)2, these audio-visual data streams are multiplexed,

and it is a sending-out period for every predetermined program, is multiplexed, and is sent out from parabolic antenna 130C. This sent-out data stream is supplied to the parabolic antenna 3 of electronic equipment 10 through the transponder of satellite 130D.
[0021] Next, the example of a configuration of IRD2 of electronic equipment 10 is explained below. A parabolic antenna 3 has LNB(Low Noise Block downconverter)3a, changes the signal from a satellite into the signal of a predetermined frequency, and supplies it to IRD2 as an input signal RS. IRD2 supplies the output to the monitoring device 4 through Rhine 11 constituted by three lines, a video signal line, an audio L signal line, and an audio R signal line.
[0022] DSS (Digital Satellite System, however DSS are trademark) mode is the mode in which the electric wave transmitted through a satellite by the method mentioned above is received, and TV mode is the mode in which the usual terrestrial television broadcasting is received. The example of a configuration inside [for performing reception with DSS mode] IRD2 is shown. The tuner of a front end 20 (receiving means) is supplied, it gets over, an error is detected and corrected, and the input signal RS outputted from LNB3a of a parabolic antenna 3 is amended if needed.
[0023] A demultiplexer 24 receives the input of the signal which the error correction circuit 23 of a front end 20 outputs, and makes the data buffer memory (DRAM (DynamicRandom Access Memory) or SRAM (StaticRandom Access Memory)) 35 once memorize this. And a demultiplexer 24 supplies the video signal which read and decoded this suitably to the MPEG video decoder 25, and supplies the decoded audio signal to the MPEG audio decoder 26.
[0024] The MPEG video decoder 25 makes DRAM25a memorize the inputted digital video signal suitably, and performs decoding of the video signal compressed by the MPEG method. The decoded video signal is supplied to the NTSC (NationalTelevision System Committee) encoder 27, and is changed into the luminance signal (Y) of NTSC system, a chroma signal (C), and a composite signal (V). A luminance signal and a chroma signal are outputted as an S video signal through the buffer amplifier 28Y and 28C, respectively. Moreover, a composite signal is outputted through buffer amplifier 28V.
[0025] The MPEG audio decoder 26 makes DRAM26a memorize suitably the digital audio signal supplied from the demultiplexer 24, and performs decoding of the audio signal compressed by the MPEG method. In D/A converter 30, D/A conversion of the decoded audio signal is carried out, the audio signal of a left channel is outputted to Loudspeaker SP through buffer amplifier 31L, and the audio signal of a right channel is outputted to Loudspeaker SP through buffer amplifier 31R.
[0026] CPU (Central Processing Unit)29 performs various kinds of processings according to the program memorized by ROM37, and outputs a predetermined control signal to other AV equipments mentioned later through AV equipment control signal transceiver section 2A, and receives the control signal from other AV equipments.
[0027] To this CPU29, the key of the control unit 101 of the front panel 40 shown in drawing 3 can be operated, and the direct input of the predetermined command can be carried out. Moreover, if a remote commander 5 (drawing 24) is operated, outgoing radiation of the infrared signal will be carried out from that IR dispatch section 51, this infrared signal will be received by the IR receive section 39, and a light-receiving result will be supplied to CPU29. Therefore, a predetermined command can be inputted into CPU29 also by operating a remote commander 5.
[0028] A demultiplexer 24 incorporates the data of EPG (Electronic Program Guide: call it below electronic program guide EPG information) etc., and EPG area 35A of the data buffer memory 35 is made to supply and memorize it in addition to the MPEG video data supplied from a front end 20, and audio data. This EPG information includes the information (for example, a channel besides the contraction still picture of a program, broadcasting hours, a title, a category, etc.) about the program of each broadcast channel. Since this EPG information is transmitted frequently, it can always hold the newest EPG information to EPG area 35A.
[0029] The data (for example, the receiving hysteresis for 4 week, a power source channel number received just before [off] (last channel)) which want to hold after power-source off are suitably

memorized by EEPROM (Electrically Erasable Programable Read Only Memory)38. And for example, when a power source is turned on, the same channel as a last channel is made to receive again.
[0030] CPU29 controls the MPEG video decoder 25 to generate predetermined OSD (On-Screen Display) data. The MPEG video decoder 25 generates predetermined OSD data corresponding to this control, writes them in the OSD area of DRAM25a, is read further and outputted. Thereby, it can be made that the usual predetermined screens, such as an alphabetic character, a graphic form, and an image, are overlapped (still picture of an alphabetic character, a station LOGO, a genre icon, and a number window), etc. and to output and display on a monitoring device 4 suitably.
[0031] SRAM36 is used as work-piece memory of CPU29. A modem 34 delivers and receives data through a dial-up line under control of CPU29. That is, to the modem 34 of IRD2, the Internet 82 is accessed through the dial-up line 80 and the provider 81. The Internet 82 mentioned above is a kind of a communication network, and the user of electronic equipment 10 can incorporate various kinds of information to the CPU29 side through a modem 34 using this Internet 82. Moreover, to AV equipment control signal transceiver section 2A, a digital camera 70, DVD (digital versatile disc, digital videodisc) drive equipment 71, the CD (compact disk) drive 72, and the 73 or 8mm video tape recorder 74 75 of digital video (DV) tape recorders, for example, a VHS video tape recorder etc., can make external connection, for example as an external instrument. Each of DVDs, CDs, DV, etc. is trademarks.
[0032] Next, the means of displaying of the screen displayed in a monitoring device 4 is explained using IRD2 of the electronic equipment 10 of drawing 7 . Drawing 8 shows screen 4A of a monitoring device 4, and drawing 9 shows the present screen 500 of an animation as shown in drawing 16 , or a still picture to this screen 4A. Drawing 9 shows the example which displayed the 1st hierarchy 150 in screen 4A of drawing 8 . Drawing 10 replaces with the 1st hierarchy's 150 display in this screen 4A, and shows the example which displayed the 2nd hierarchy 200 and the 3rd hierarchy 300 on coincidence.
[0033] The 1st hierarchy 150 who shows drawing 9 constitutes, and is hierarchized by the selections (tag) corresponding to the function which it is going to display on screen 4A of a monitoring device 4. as the 1st hierarchy's 150 selections -- "program guide" 151 -- "-- while looking at -- guide" -- it has 152, "news" 153, "multimedia" 154, "menu" 155, "video" 156, etc. The example of the initial screen P0 including the 1st hierarchy 150 is shown in drawing 16 . "Program guide" 151 can display the 2nd hierarchy 200 and the 3rd hierarchy 300 who replaced with the 1st hierarchy's 150 display and included the contents of the various programs based on various broadcast types and who show drawing 10 , when a user chooses this. The concrete example of the initial screen P1 of the "program guide" of drawing 10 is shown in drawing 17 .
[0034] the 1st hierarchy 150 of drawing 9 -- "-- if a user chooses guide"152, looking at, it can replace with the 1st hierarchy's 150 display, and the 2nd hierarchy 200 of drawing 10 corresponding to it and the 3rd hierarchy 300 can be displayed on coincidence. this -- "-- the example of the initial screen P2 of guide"152 is shown in drawing 11 (B), looking at, and the concrete example is shown in drawing 18 . If a user chooses "news" 153 of drawing 9 , it will replace with the 1st hierarchy's 150 display, and the 2nd hierarchy 200 and the 3rd hierarchy 300 who show drawing 10 will be displayed on coincidence. "News" The initial screen P3 of the 2nd hierarchy 200 corresponding to 153 and the 3rd hierarchy 300 is shown in drawing 11 (C), and shows the concrete thing to drawing 19 .
[0035] If a user chooses "multimedia" 154 of drawing 9 , it replaces with the 1st hierarchy's 150 display, and the 2nd hierarchy 200 of drawing 10 corresponding to it and the 3rd hierarchy 300 can be displayed on coincidence, and the initial screen P4 of the 2nd hierarchy 200 corresponding to "multimedia" 154 and the 3rd hierarchy 300 is shown in drawing 11 (D), and shows the more concrete example to drawing 20 etc. If a user chooses "menu" 155 of the 1st hierarchy 150 of drawing 9 , it will replace with the 1st hierarchy's 150 display, and the 2nd hierarchy 200 and the 3rd hierarchy 300 of drawing 10 will be displayed on coincidence corresponding to it. "Menu" The initial

screen P5 of 155 is shown in drawing 11 (E), and shows the more concrete example to drawing 25 . Although the 2nd hierarchy 200 and the 3rd hierarchy 300 who replace with the 1st hierarchy's 150 display and show drawing 10 will be displayed on coincidence if a user chooses "video" 156 of the 1st hierarchy 150 of drawing 9 , as the concrete example, it is shown in drawing 26 etc.
[0036] furthermore, the initial screen P1 of the "program guide" which is one of the description parts of the gestalt of operation of this invention shown in drawing 11 -- and -- "-- it is explaining in more detail about the example of a configuration of the initial screen P2 of guide", the initial screen P3 of "news", the initial screen P4 of "multimedia", and the initial screen P5 of a "menu" etc., looking at.
[0037] Drawing 17 shows the example of the initial screen P1 of the "program guide" which is one of the description parts of the gestalt of operation of this invention. The 2nd hierarchy 200 of the initial screen P1 of this "program guide" is constituted by the selections called two or more tags. The 2nd hierarchy 200 has each selections (tag) of a ground wave /BS200A, CS digital 200B, cable TV 200C, and a broadcast type (broadcast category) like external input 200D. the 3rd hierarchy 300 of drawing 17 -- the contents (contents) of each program -- for example, the reduced quiescence screen is arranged in the shape of a matrix, and it is shown. In this example, a total of 12 kinds of contents are displayed. The reduced display of the current screen 500 by which can come, simultaneously it is indicated by current at the 2nd hierarchy 200 bottom is carried out as an animation. The contents of a display of this present screen 500 are the same as the present screen 500 in the initial screen P0 of drawing 16 . The channel number is contained in the upper right portion at each reduced screen.
[0038] drawing 18 is shown in drawing 11 (B) -- "-- an example of the initial screen P2 of guide" is shown looking at, and the 2nd hierarchy 200 has movie 201A [which is two or more selections],. news 201B, sport 201C, drama 201D, and variety 201E, music 201F, documentary 201G, and a child and educational 201H. The 3rd hierarchy 300 shows on behalf of the reduced screen of the four contents of a program (contents). The current screen 500 as a parent screen is displayed on this 3rd hierarchy's 300 right-hand side. This present screen 500 is a screen in the condition of having contracted crosswise the present screen 500 shown in drawing 16 .
[0039] Drawing 19 shows the example of the initial screen P3 of the "news" of drawing 11 (C). The 2nd hierarchy 200 has topic 202A which is four selections, international 202B, economic 202C, and sport 202D. The 3rd hierarchy 300 has some display 302A as selections thru/or 302F. On the bottom of the 3rd hierarchy 300, the actuation message 390 of an actuation key can be displayed in graphic. Moreover, the current screen 500 is displayed on the bottom of the 2nd hierarchy 200.
[0040] Drawing 22 shows the example of the initial screen P4 of "multimedia." It has homepage 203A, album 203B, shopping 203C, and game 203D as the 2nd hierarchy's 200 selections. The 3rd hierarchy 300 shows the advertising example for carrying out shopping, and plurality, for example, six advertisements, is arranged in the shape of a matrix. And on the bottom of six advertisements, oblong, advertising 303F [still more nearly another] are displayed. The current screen 500 is displayed on the bottom of the 2nd hierarchy 200.
[0041] The example of the "menu" initial screen P5 of drawing 11 (E) is shown in drawing 24 , and the 2nd hierarchy 200 has two screen 204A, image quality / tone-quality 204B, wide 204C, and mode setting 204D as selections in drawing 24 . The 3rd hierarchy 300 has selections, such as two screen 304A, twin selection 304B, actuation exchange 304C, headphone 304D, and screen exchange 304E. If the 4th hierarchy 400 can display on the 3rd hierarchy's 300 right-hand side, for example, furthermore chooses 2 screen 304A as the 3rd hierarchy's 300 selections, the selections of entering [cut] can be displayed as the 4th hierarchy 400. The actuation message 390 can be displayed on the bottom of the 3rd hierarchy 300 and the 4th hierarchy 400.
[0042] Drawing 20 indicates similar initial-screen P4-2 to be the initial screen P4 of the "multimedia" of drawing 22 . In the example of drawing 20 , when homepage 203A of the 2nd hierarchy 200 chooses [a user], the 3rd hierarchy 300 as contents shows the homepages HA, HB,

HC, HD, HE, and HF of the Internet. Even if it is this case, the current screen 500 is displayed on the bottom of the 2nd hierarchy 200.
[0043] Drawing 21 shows initial-screen P4-1 of multimedia, and although it is the same example of a display as drawing 22 , when a user chooses album 203B which is the 2nd hierarchy's 200 selections, the 3rd hierarchy 300 as contents has arranged the various reduced screens corresponding to the album in the shape of a matrix. Even if it is this case, the current screen 500 is displayed on the bottom of the 2nd hierarchy 200. As the information source shown to the 3rd hierarchy 300, it is the digital information acquired, for example from a digital camera, and two or more reduced screens (photograph) are arranged in the shape of a matrix based on this information.
[0044] Also in the initial screen P4 of the "multimedia" of drawing 22 , when a user chooses the 2nd hierarchy's 200 "shopping", the 3rd hierarchy's 300 selection screen shows the advertisement for shoppings, and shows advertising 303F [different from the shopping advertisements SA, SB, SC, SD, SE, and SF / large]. By initial-screen P4-3 of the "multimedia" of drawing 23 , when a user chooses the 2nd hierarchy's 200 game 203D, the 3rd hierarchy 300 shows the representation screens GA, GB, GC, GD, GE, and GF of a game. Even if it is this case, the representation screen 500 is displayed.
[0045] Drawing 26 shows the example of actuation of the initial screen P6 of "video" of drawing 25 , and has control 205A, DVD205B, DV tape (digital video tape) 205C, VHS video 205D, and 8mm camcorder 205E as the 2nd hierarchy's 200 selections in drawing 25 and drawing 26 . If the 2nd hierarchy's 200 DVD205B is chosen by the user, for example, in drawing 25 and drawing 26 , the representation screen for every predetermined time interval can arrange in the shape of a matrix as a reduced screen in the software of the DVD to the 3rd hierarchy 300. The current screen 500 is displayed on the bottom of the 2nd hierarchy 200. Title display column 205F which display the title of the software of DVD in the case of drawing 25 can be displayed, and, in the case of drawing 26 , counter display column 205G which show to which grade the display is progressing now can be displayed at the lower part of each reduced screen of the 3rd hierarchy 300.
[0046] Drawing 27 shows the example of a display of the 3rd hierarchy 300 and the 4th hierarchy 400, when the 2nd hierarchy's 200 control 205A is chosen. the 3rd hierarchy 300 -- advance of an external connection device, for example, a DVD player, a halt, a pause, and a rapid traverse -- or functions, such as return, are already displayed. For example, if the 3rd hierarchy's 300 selections 305A is chosen, halt 405A can be displayed on the 4th hierarchy 400.
[0047] Drawing 28 shows the example of actuation of the initial screen P5 of the "menu" in drawing 24 . The function corresponding to the item chosen on the 2nd hierarchy 200, respectively is displayed on the 3rd hierarchy 300 and the 4th hierarchy 400. Drawing 29 is the 2nd hierarchy's 200 VISU like drawing 28 ... (a scrolling display can be performed when there are many alphabetic characters which it is going to display) By choosing 207A, the 3rd hierarchy 300 and the 4th hierarchy 400 can be displayed, and the function of the indicator of image quality adjustment is displayed on the 4th hierarchy 400. Drawing 30 expands and shows only the 4th hierarchy 400 for image quality adjustment in drawing 28 and drawing 29 .
[0048] In drawing 16 mentioned above thru/or the example of a display of the screen of drawing 30 , display modification actuation for example, between the 1st hierarchy 150 who shows drawing 16 , the 2nd hierarchy 200 who shows drawing 17 , and the 3rd hierarchy 300 can be performed by operating suitably the remote commander "top" key 102, the "right" key 103, the "left" key 104, and the "bottom" key 105. [which is shown in the control unit 130 shown in drawing 3 </A>, or drawing 6] To the 1st hierarchy 150 of drawing 16 , by using the "top" key 102 and the "bottom" key 105, when Pointer PT carries out vertical migration, it can choose with one pointer PT from the selections of "program guide" 151 thru/or "video" 156. And if "decision" key 106 of drawing 6 is pressed, the selected item will be determined.
[0049] In drawing 17 which is one of the description parts of the gestalt of operation of this invention, Pointer PT can be moved up and down by operating the "top" key 102 and the "bottom"

key 105 too in the ground wave /BS200A thru/or external input 200D which is the 2nd hierarchy 200. Thereby, one selections in the 2nd hierarchy 200 can be chosen, and the selection can be determined by pushing "decision key" 106. Moreover, by operating suitably the "top" key 102, the "right" key 103, the "left" key 104, and the "bottom" key 105, if Pointer PT is moved corresponding to the contents of the program arranged in the shape of [for example, in the 3rd hierarchy 300 who shows drawing 17] a matrix and "decision" key 106 is pressed, it can opt for selection of the 3rd hierarchy's 300 contents of a program (contents).

[0050] This pointer PT moves the right-hand side of each selections of the 1st hierarchy 150 up and down in the initial screen P0 of drawing 16 , moreover, that pointer PT shows the arrow-head configuration of the shape for example, of a triangle, and the sense of Pointer PT shows the purport which can perform display modification actuation towards the 2nd hierarchy 200 of drawing 17 to a user. On the other hand, in the case of the pointer PT arranged like drawing 17 corresponding to the 2nd hierarchy 200, the sense of the pointer PT has turned to left-hand side, i.e., the sense supposing the 1st hierarchy 150 of drawing 16 . Thus, an operation of Pointer PT can be similarly displayed in drawing 18 which shows other display screens - drawing 30 .

[0051] Drawing 8 thru/or drawing 10 display the 1st hierarchy 150 in screen 4A, and shows the point which replaces with the 1st hierarchy's 150 display and displays the 2nd hierarchy 200 and the 3rd hierarchy 300. What is necessary is just to press the "Magic" key 107 of the control unit 101 of drawing 3 , or the "Magic" key 107 of the remote commander 5 of drawing 4 , in displaying the 1st hierarchy 150, as shown in drawing 9 as it puts on the present screen 500 of screen 4A of drawing 8 . And what is necessary is just to press the "right" key 103 of drawing 3 or drawing 6 , or "decision" key 106, in replacing with the 1st hierarchy's 150 display and displaying the 2nd hierarchy 200 and the 3rd hierarchy 300 on coincidence. On the contrary, what is necessary is just to press the "left" key 104 of drawing 6 , in replacing with a display of the 2nd hierarchy 200 of drawing 10 , and the 3rd hierarchy 300 and displaying the 1st hierarchy 150. And what is necessary is just to press the "Magic" key 107 again, in erasing the 1st hierarchy's 150 display.

[0052] Although the 2nd hierarchy 200 and the 3rd hierarchy 300 are shown in screen 4A in drawing 12 (A), the selections in the 2nd hierarchy 200 can be suitably chosen by operating the drawing 6 "top" key 102 or the "bottom" key 105. And by pressing the "right" key 103 or pressing "decision" key 106, as shown in drawing 12 (B), the selections in the 3rd hierarchy 300 can be chosen now. Also in this case, one of the selections can be chosen by pressing suitably the "top" key 102 or the "bottom" key 105. Furthermore, as shown in drawing 12 (C), when moving to the 4th hierarchy 400, the selections in the 4th hierarchy 400 can be chosen by pressing the "right" key 103 or "decision" key 106. Conversely, what is necessary is just to press the "left" key 104 too that what is necessary is just to press the "left" key 104, in returning to the condition of drawing 12 (A) from the condition of drawing 12 (B) in order to return from the condition of drawing 12 (D) to the condition of drawing 12 (C) and drawing 12 (B). Moreover, by pressing the direct key which is not illustrated, it is also possible to return, without passing through the screen shown in drawing 12 (A) thru/or (C), the initial screen P1, for example, the initial screen, of each function.

[0053] Drawing 13 shows each selections of the 1st hierarchy 150 of drawing 9 , i.e., the item of a tag. When selections, "menu" 155 [for example,], are chosen, it is displayed that the "menu" 155 are emphasized compared with other selections. Or it is also possible to display darkly places other than "menu" 155 which are the selected item. The display format by such light and darkness is applicable also in the example of the display screen of illustration. in the 2nd hierarchy 200, when there is number of letters to the extent that it cannot display as selections, the variety item 280 shows drawing 14 (A) -- as -- BARAE -- it can display like ... In the example shown in drawing 14 (B), when the variety item 280 is chosen, for example, it can expand and display and the alphabetic character of all varieties can be displayed. That is, as the notation approach of a tag name, only when chosen, what displays all configuration alphabetic characters can be performed.

[0054] Drawing 15 (A) can form the layered structure of the shape of a matrix like 4x4, when the

selections which constitute the 3rd hierarchy are arranged in the shape of a matrix and each shows graphic contents. In the case of a teletext as the selections which constitute the 3rd hierarchy show to drawing 19 like a teletext, drawing 15 (B) can arrange a band-like display item like 1x8, and can constitute a hierarchy in it. Thus, the basic layout on a screen as shown in drawing 15 (A) and (B) can be constituted. This view is employable also not only in the 3rd hierarchy but the 4th hierarchy, the 2nd hierarchy, or the 1st hierarchy.

[0055] Next, drawing 31 is referred to. Drawing 31 shows not the screen configuration of the ratio of 4:3 but the example of a configuration of the 2nd hierarchy 200 at the time of making it the wide screen television mode of 16:9, and the 3rd hierarchy 300. As shown in drawing 31 (B), in the case of the wide television mode of 16:9, the 3rd hierarchy's 300 number of reduced screens, i.e., the number of tags, is also changeable so that it may differ from the usual television mode of 4:3. Drawing 32 shows an example of a motion of the pointer PT in the 2nd hierarchy's 200 selections (it is also called cursor). Drawing 33 shows the example of migration to the vertical direction or longitudinal direction by the pointer PT in the 3rd hierarchy 300.

[0056] Drawing 34 shows signs that the selection screen 370 is expanded and it is expanded to four A1 cup of screen by continuous motion, by pressing "decision" key 106 of drawing 6 , after choosing one reduced screen 370 in the 3rd hierarchy 300. In the initial screen P3, the 3rd hierarchy's 300 selections 375 are chosen and drawing 35 shows signs that the more detailed contents 376 were displayed on screen 4A when "decision" key 106 was pressed. Drawing 36 shows signs that the contents of the selection screen 377 are expanded and displayed by screen 4A, if "decision" key 106 is pressed when one selection screen 377 is chosen in an initial screen P4.

[0057] Drawing 37 shows signs that it can scroll along with above [A1] or down [A2] one by one, by operating the drawing 6 "top" key 102 or the "bottom" key 105, when the number of the selections which constitute the 3rd hierarchy 300, i.e., a reduced screen, cannot display at once within screen 4A. This scrolling actuation can also scroll the right B1 or leftward B-2 similarly by operating the "left" key 104 of drawing 6 , or the "right" key 103. Thereby, the 3rd hierarchy 300 can arrange the reduced screen which are more selections in the shape of a matrix, and can hold it.

[0058] Next, drawing 38 takes out text ahead of an image or image information, when neither a switch of a display of selections (tag) nor the renewal of the display to a motion of Pointer PT (cursor) meets the deadline, in case the 3rd hierarchy's 300 contents of a program are displayed. Thereby, selection by the 3rd hierarchy's pointer PT can be performed, without having renewal of the image information of each reduced screen. As the updating approach of such contents of a program, the updating approach by updating by actuation of (1) user and the renewal of automatic by the side of (2) electronic equipment is employable. The method most updated for every [a group / every], i.e., a reduced screen, like drawing 38 as a unit of the contents of a program updated, the method which updates collectively two or more reduced screens contained in a party or the method which updates all the 3rd hierarchy's 300 programs at once for every page, etc. can be considered.

[0059] As shown in drawing 41 (A) and (B), a channel number, the LOGO of the station of a broadcasting station, etc. can also be displayed on the upper right, such as each reduced screen of the 3rd hierarchy 300. As shown in drawing 42 which is the description part of the gestalt of operation of this invention, when one reduced screen 370 of the 3rd hierarchy 300 is chosen, it is also possible to form preliminary decision mode, to expand a reduced screen 370 slightly, as shown in drawing 42 (B), and to make it more legible besides pressing "decision" key 106 of drawing 3 or drawing 6 , and expanding the reduced screen 370 all over screen 4A. Thus, what is necessary is to press "decision" key 106 of drawing 6 and just to expand to the whole screen 4A, after a user checks the contents of the reduced screen 370 of a program. Although it is desirable in each initial screens P1, P3, P4, and P5 etc. to display the present screen 500 as shown in drawing 11 (A), (C), (D), and (E), you may make it this present screen 500 utter voice from a loudspeaker at coincidence, for example in the case of an animation.

[0060] Ground wave /BS200A of the 2nd hierarchy 200 who shows drawing 17 which is the description part of the gestalt of operation of this invention, or CS digital 200B is a tag for the electric wave by the ground wave or the electric wave by satellite broadcasting service to receive many kinds of contents of a program. Moreover, IRD2 of the electronic equipment 10 of drawing 7 can also receive the contents of a program by cable television 200C with a cable. Moreover, if external input 206D is chosen, in the 3rd hierarchy 300, a required reduced screen can be arranged in the shape of a matrix in inputting the external signal of the digital camera 70 as shown in drawing 7 , the DVD player 71, the CD-drive 72, the 73 or 8mm video tape recorder 74 of digital video recorders, or the VHS video tape recorder 75. The concrete configuration for generating automatically the reduced screen (index image) of such two or more classes, for example, indicating by list at the shape of a matrix can adopt the technique currently indicated by JP,6-153157,A.
[0061] The contents of the 2nd hierarchy 200 who shows drawing 19 , and the 3rd hierarchy 300 can acquire the contents by the teletext which used satellite broadcasting service. The contraction image in which the homepages HA and HF of the 2nd hierarchy 200 of drawing 20 and the 3rd hierarchy 300 are shown is acquirable through the Internet 82 of drawing 7 . Each contraction image of the 3rd hierarchy 300 of drawing 21 can be used as an album of a photograph in generating an index image automatically with the input signal from the digital camera 70 of drawing 7 , and arranging in the shape of a matrix. Each contraction image of the 3rd hierarchy 300 of drawing 22 shows the advertisements SA and SF for shoppings thru/or advertising 303F. The information on such an advertisement for shoppings is acquirable from the Internet 82 of drawing 7 with satellite broadcasting service.
[0062] Although the 3rd hierarchy 300 of drawing 23 is advertising two or more kinds of game GA-GF, he can acquire the contents of the advertisement of these games from the Internet 82 and satellite broadcasting service. The contents of the 2nd hierarchy 200 of drawing 25 and the 3rd hierarchy 300 are acquirable from a digital camera 70 thru/or a digital video recorder 73, etc. which is the external connection device connected to IRD2 of drawing 7 . For example, like drawing 22 , if it is made to display the image of advertising 303F, what obtains advertising revenue by the advertising 303F etc. is possible. Like the actuation message 390 shown in drawing 24 , if it is made to display the actuation message 390 on coincidence, how to use an actuation key can be explained visually.
[0063] Next, with reference to drawing 43 etc., the example of actuation of the electronic equipment 10 of this invention is explained. In step S1 of drawing 43 , a user operates the actuation key of the remote commander 5 shown in drawing 6 , or the actuation key of the control unit 101 of IRD2 of drawing 3 . A push on the "Magic" key 107 of either a remote commander 5 or IRD2 expresses the initial screen P0 shown in drawing 9 and drawing 16 in step S3 to screen 4A as step S2. In the initial screen P0, the 1st hierarchy 150 is displayed on the current screen 500 already displayed in piles. In step S4, a user operates the "top" key 102 or the "bottom" key 105. "program guide" 151 which are the selections in the 1st hierarchy 150 -- "-- while looking at -- guide" -- out of 152, "news" 153, "multimedia" 154, "menu" 155, and "video" 156 For example, if Pointer PT is positioned to "program guide" 151 and "decision" key 106 is pressed, in step S5, the initial screen P1 of the "program guide" shown in drawing 17 will be displayed.
[0064] In the gestalt of operation of this invention, Pointer PT is positioned and chosen as the selections in the 2nd hierarchy 200, for example, CS digital 200B, in the initial screen P1 of the "program guide" of drawing 17 which is the description part, and if "decision" key 106 is pressed, two or more reduced screens of the contents (contents) of the program corresponding to the CS digital 200B will be displayed on the 3rd hierarchy 300. And when a user operates the "top" key 102, the "right" key 103, the "left" key 104, the "bottom" key 105, etc. and moves Pointer PT, the reduced screen of arbitration can be chosen and the selected reduced screen can be expanded to four A1 cup of screen by pressing "decision" key 106. In this case, while moving Pointer PT among the 3rd hierarchy 300, the voice corresponding to the reduced screen which Pointer PT is directing

can be uttered from the loudspeaker SP of the monitoring device 4 of drawing 7 . The voice of the present screen 500 can also be taken out from Loudspeaker SP to this and coincidence. This current screen 500 is the program (parent screen) to which it was viewing and listening before going into the initial screen P1 of a "program guide", and can always utter a movie display and voice. The enlarged display of the present screen 500 can also be carried out quickly if needed.

[0065] When choosing each contents of the 3rd hierarchy 300 in the gestalt of operation of this invention, a user in drawing 17 which is the description part for example, by operating the "right" key 103 sequentially the positions SP1 and SP2 corresponding to the reduced screen which shows each contents of drawing 17 , and ..... it is made a wind called SP12, and sequential migration can be carried out and the selected reduced screen can be chosen in the selected position, for example, SP's7 place. In this case, if a position SP 12 is arrived at, it can return to a position SP 1 again, and endless scrolling can be performed. on the contrary -- if a user operates the "left" key 104 -- SP12, SP11, and ..... it can follow to the hard flow of SP2 and SP1, and the reduced screen which shows contents can be chosen. Thus, in the reduced screen which shows the contents arranged in the shape of a matrix, as shown in drawing 17 , scrolling migration can be carried out and the reduced screen of arbitration can be chosen as the shape of zigzag, because a user operates a body or the key of a remote commander. Such move mode is an example and, of course, it is possible to also make it move also to a lengthwise direction like other move modes, SP1, SP4, and SP7, and ..... [for example,]

[0066] the 1st hierarchy 150 of drawing 16 -- setting -- step S6 of drawing 43 -- "-- when guide"152 are chosen and determined, looking at, it is shown in drawing 18 -- "-- the initial screen P2 of guide" is displayed, looking at. In this case, the present screen 500 can be expressed as the method of a display of having contracted the longitudinal direction to the right half of screen 4A. The 3rd hierarchy's 300 screen can be chosen looking at the present screen 500. For example, choosing the 3rd hierarchy's 300 channel or watching a sport relay broadcast on the present screen 500 looking at a drama on the present screen 500, the 3rd hierarchy's 300 channel selection can be performed, and it can view and listen in the state of two screens. in addition, this present screen 500 -- "-- it is the parent screen to which it was viewing and listening just before starting a guide" function, looking at, and the voice of this present screen 500 can be uttered from Loudspeaker SP.

[0067] Next, like step S7 of drawing 43 , when news 153 are chosen and determined out of the 1st hierarchy 150 of the initial screen P0 of drawing 16 , the initial screen P3 of the "news" of drawing 19 can be displayed. In this case, if for example, the 2nd hierarchy's 200 economic 202C is chosen, the contents corresponding to that economy can be displayed on the 3rd hierarchy 300 in the form of a teletext.

[0068] Next, if "multimedia" 154 of the 1st hierarchy 150 in the initial screen P0 of drawing 16 are chosen and determined as shown in step S8 of drawing 43 , shopping information like drawing 22 can be displayed, for example. In the initial screen P4 of this "multimedia", if the 2nd hierarchy's 200 shopping 203C is chosen, the advertisement of shopping can be displayed in the 3rd hierarchy 300. Or like drawing 20 , if homepage 203A is chosen in the 2nd hierarchy 200, the 3rd hierarchy 300 can display Homepages HA and HF. Moreover, if the 2nd hierarchy's 200 album 203B is chosen like drawing 21 , the 3rd hierarchy 300 can display two or more photographs based on the input signal from for example, an external key. Like drawing 23 , if the 2nd hierarchy's 200 game 203D is chosen and determined, Advertisement GA thru/or GF of a reduced screen (still picture) which shows the contents of the game can be expressed as the 3rd hierarchy 300.

[0069] Next, if "menu" 155 of drawing 16 are chosen and determined as shown in step S9 of drawing 43 , the initial screen P5 of a "menu" like drawing 24 can be displayed. For example, selection of the 2nd hierarchy's 200 2 screen 204A displays the 3rd hierarchy 300 and the 4th hierarchy 400 corresponding to it. If a user chooses suitably the 1st hierarchy's selections [in / as mentioned above / an initial screen P0] by liking and determines, even the 4th hierarchy can display on coincidence the 2nd hierarchy corresponding to it and the 3rd hierarchy, and if needed. In

this case, the 1st hierarchy's display disappears and displays the 4th hierarchy on coincidence the 2nd hierarchy and the 3rd hierarchy, and if needed.
[0070] and the step S11 of drawing 43 -- setting -- "left key" 104 of drawing 6 -- step S10 -- like -- 1 time or carrying out multiple-times actuation -- the initial screen P1 of a "program guide" -- "-- it can return to an initial screen P0 from the initial screen P2 of guide", the initial screen P3 of "news", the initial screen P4 of "multimedia", and the initial screen P5 of a "menu", looking at. if a user performs a direct key stroke at step S11 in step S2 of drawing 43 , without carrying out actuation by the magic key 107 -- "menu screen key" 108 of drawing 6 , "new skiing" 110, "multimedia key" 109, and "program guide key" 111 -- "-- it is also possible by choosing and operating guide key"112 to choose suitably directly the initial screen P1 which was mentioned above thru/or P5, etc., looking at. [namely,]
[0071] With the gestalt of operation of this invention, the 1st hierarchy's tag is displayed by the Magic key stroke, the tag of the 2nd hierarchy who shows all the categories that are the selection actuation and correspond, and the reduced screen of the 3rd hierarchy who shows the contents contained in the selected category are displayed on coincidence, moreover, an one direction zigzag mold is scrolled in the shape of endless, and it is selectable in desired contents.
[0072] Although the example which transmits data streams, such as the contents of a program, to an electronic equipment 10 side using satellite 130D from the sending set side of drawing 7 is shown, of course, the gestalt of operation mentioned above is available, even if it transmits the data stream not only by this but the ground wave. Moreover, it can also send through the Internet 82 of drawing 7 , and can also supply from either of the external connection devices 700 of drawing 7 , or the 3rd hierarchy's data in the initial screen of multimedia like drawing 20 thru/or drawing 23 can also be supplied from a satellite broadcast wave or a ground wave through a sending set 130. Moreover, a sending set 130 and electronic equipment may be connected with a cable.
[0073] Moreover, you may make it offer the computer program for realizing the function to operate the electronic equipment of this invention by not making the memory in IRD2 of drawing 7 (for example, ROM37 grade) memorize, for example, downloading from the exterior to IRD2 of drawing 7 via the Internet 82 through a provider 81, the telephone line 80, a modem 34, etc. It replaces with this and a computer program is stored in record media, such as FD (floppy disk) and CD-ROM, and, of course, it does not matter even if it installs through FD drive and the CD-ROM drive by which external was carried out to IRD2.
[0074]
[Effect of the Invention] Since according to this invention it replaces with the 1st hierarchy's display and the 2nd hierarchy and the 3rd hierarchy can be displayed on coincidence as explained above, a user can grasp structure of the whole hierarchy of a program easily, and can choose and see the contents of a desired program, and the actuation can be performed easily.

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The perspective view showing an example of the electronic equipment of this invention.
[Drawing 2] Drawing showing the configuration of the electronic equipment of drawing 1 .
[Drawing 3] The front view showing an example of IRD shown in drawing 1 and drawing 2 .
[Drawing 4] Drawing showing an example of the remote commander of the electronic equipment of drawing 1 and drawing 2 .
[Drawing 5] Drawing showing the dispatch part of the remote commander of drawing 4 .
[Drawing 6] The enlarged drawing showing the control unit of the remote commander of drawing 4 .
[Drawing 7] Drawing showing the example of a configuration of the electronic equipment of drawing 1 and drawing 2 etc.
[Drawing 8] Drawing showing the screen in a monitoring device.
[Drawing 9] Drawing showing the condition of having displayed the 1st hierarchy in the screen of drawing 8 .
[Drawing 10] Drawing showing the example which displayed the 2nd and 3rd hierarchies on coincidence in the screen.
[Drawing 11] Drawing showing the initial screen which shows the example of a display of the 2nd hierarchy and the 3rd hierarchy.
[Drawing 12] Drawing showing the example which seems to choose selections in the 2nd hierarchy, the 3rd hierarchy, and the 4th hierarchy.
[Drawing 13] Drawing expanding and showing the selections in the 1st hierarchy.
[Drawing 14] Drawing showing the example of a display of the selections in the 2nd hierarchy.
[Drawing 15] Drawing showing the example of the hierarchy organization in the 3rd hierarchy.
[Drawing 16] Drawing showing an initial screen including the 1st hierarchy.
[Drawing 17] Drawing showing the initial screen of a "program guide."
[Drawing 18] "-- drawing showing the initial screen of guide" while looking at.
[Drawing 19] Drawing showing the initial screen of "news."
[Drawing 20] Drawing showing the initial screen of "multimedia."
[Drawing 21] Drawing showing another example of the initial screen of "multimedia."
[Drawing 22] Drawing showing still more nearly another example of the initial screen of "multimedia."
[Drawing 23] Drawing showing another example of the initial screen of "multimedia."
[Drawing 24] Drawing showing the example of the initial screen of a "menu."
[Drawing 25] Drawing showing the initial screen P6 of "video."
[Drawing 26] Drawing showing the example of actuation in the initial screen of "video."
[Drawing 27] Drawing showing an example in the condition of having operated it in the initial screen of "video."
[Drawing 28] Drawing showing the condition of having operated it in the initial screen of a "menu."
[Drawing 29] Drawing showing the example operated in the initial screen of a "menu."
[Drawing 30] Drawing showing the condition of having operated it in the initial screen of a "menu."
[Drawing 31] Drawing showing the example of the layout of each reduced screen which constitutes the 3rd hierarchy.
[Drawing 32] Drawing showing the example to which a pointer (cursor) seems to move on the selections in the 2nd hierarchy.
[Drawing 33] Drawing showing the example of the selection approach of the reduced screen in the 3rd hierarchy.
[Drawing 34] Drawing showing signs that the reduced screen in the 3rd hierarchy is chosen and expanded.
[Drawing 35] Drawing showing the example which expands and displays the selection part of one

teletext in the 3rd hierarchy.
[Drawing 36] Drawing expanding and showing the 3rd hierarchy's reduced screen in the display screen of multimedia.
[Drawing 37] Drawing showing the example of scrolling in the 3rd hierarchy.
[Drawing 38] Drawing in the 3rd hierarchy showing the example of renewal of every one program.
[Drawing 39] Drawing showing the example which updates the contents of the party [every] program in the 3rd hierarchy.
[Drawing 40] Drawing showing the example which updates a program the whole 1-page round head in the 3rd hierarchy.
[Drawing 41] Drawing showing the example which displays a channel number and a station LOGO in the 3rd hierarchy's reduced screen.
[Drawing 42] Drawing showing the example which expands the 3rd hierarchy's reduced screen slightly and once displays it.
[Drawing 43] the initial screen of the display of an initial screen P0 to a "program guide" -- "-- drawing showing the example of actuation to the initial screen of guide", the initial screen of "news", the initial screen of "multimedia", and the initial screen of a "menu" etc. while looking at.
[Description of Notations]
2 ... IRD, 4 ... A monitoring device (display means), 5 ... Remote commander, 10 ... Electronic equipment, 100 ... A hierarchy selection means, 150 ... The 1st hierarchy, 200 ... The 2nd hierarchy, 300 ... The 3rd hierarchy, 400 ... The 4th hierarchy, P0 ... an initial screen and P1 ... the initial screen of a "program guide", and P2 ... "-- while looking at -- the initial screen of guide", and P3 ... the initial screen of "news", and P4 ... the initial screen of "multimedia", and P5 ... the initial screen of a "menu", and PT ... a pointer (cursor)

[Translation done.]

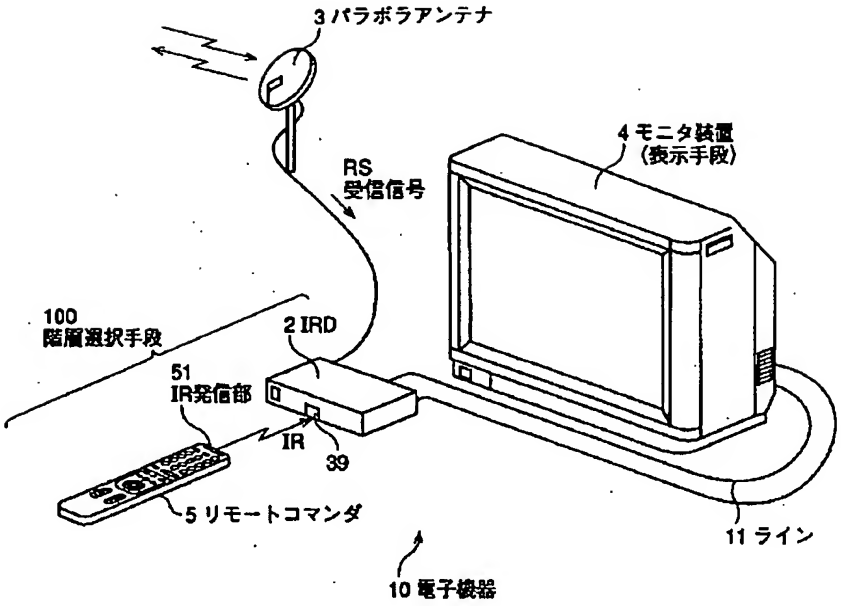
* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

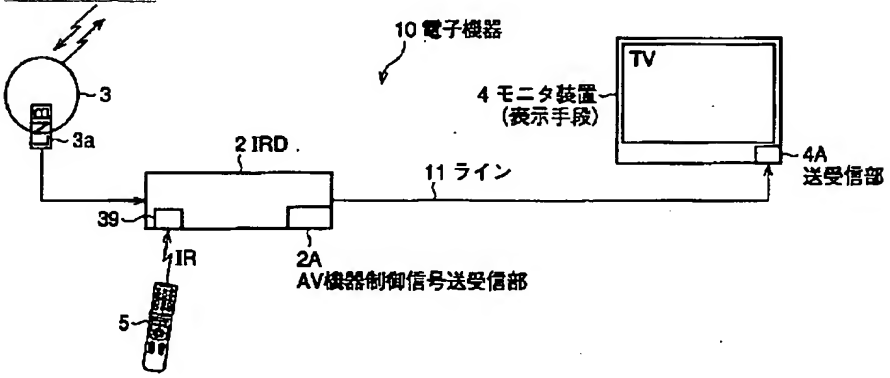
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

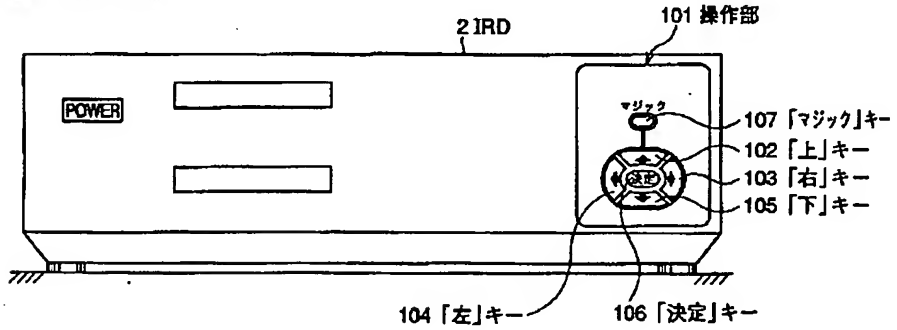
[Drawing 1]



[Drawing 2]



[Drawing 3]



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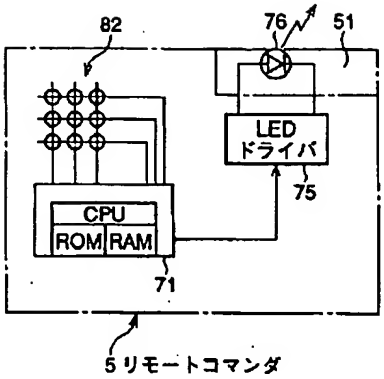

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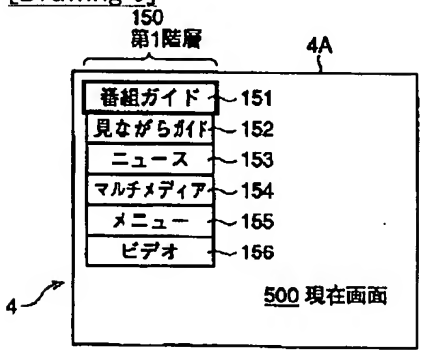
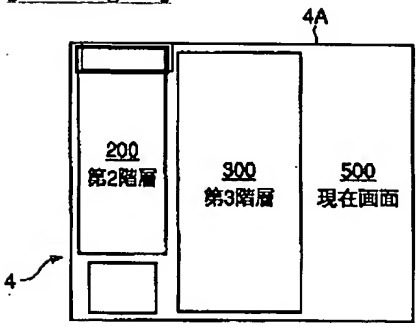
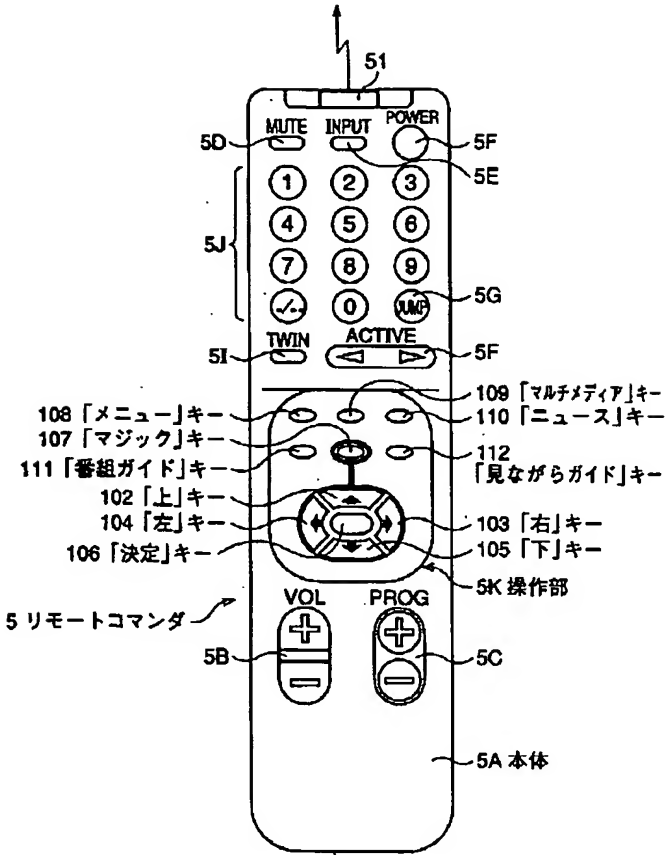


[Drawing 10]



[Drawing 4]



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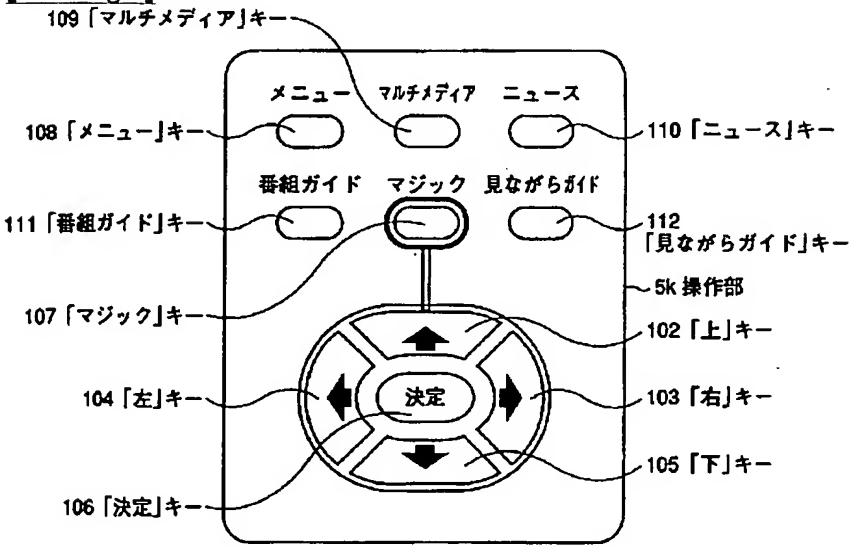
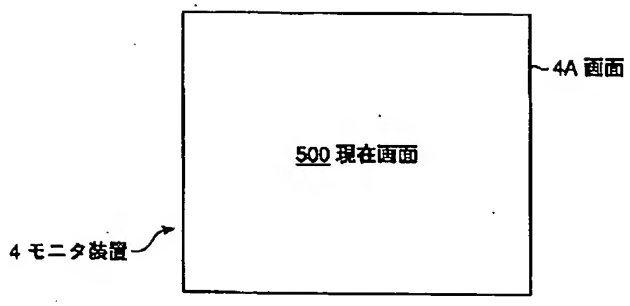
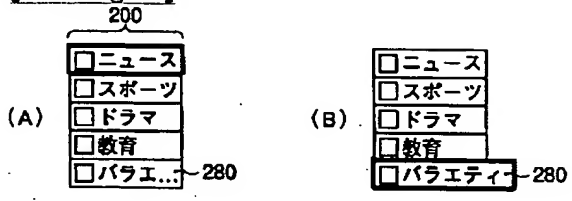


[Drawing 8]

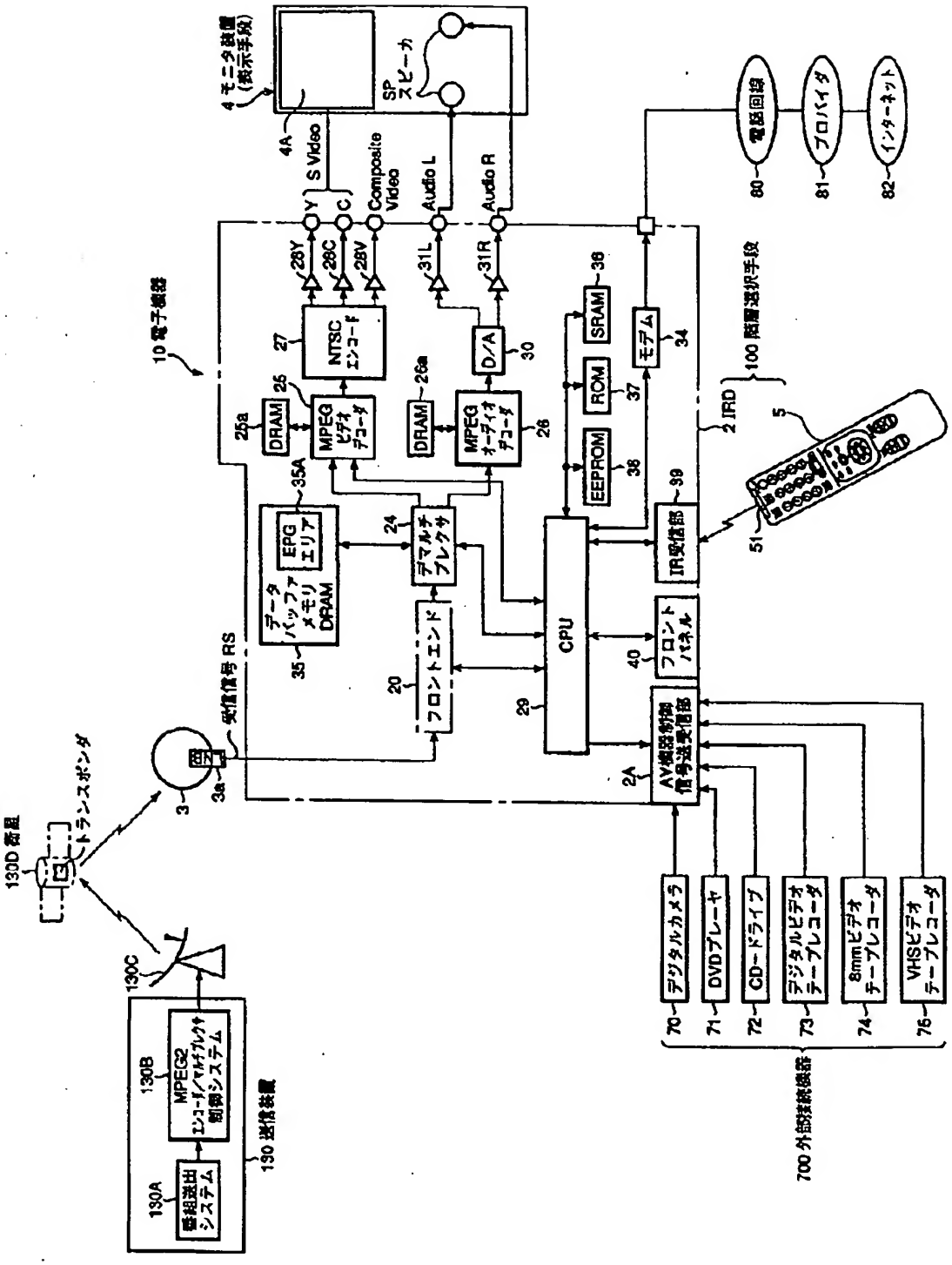


[Drawing 14]

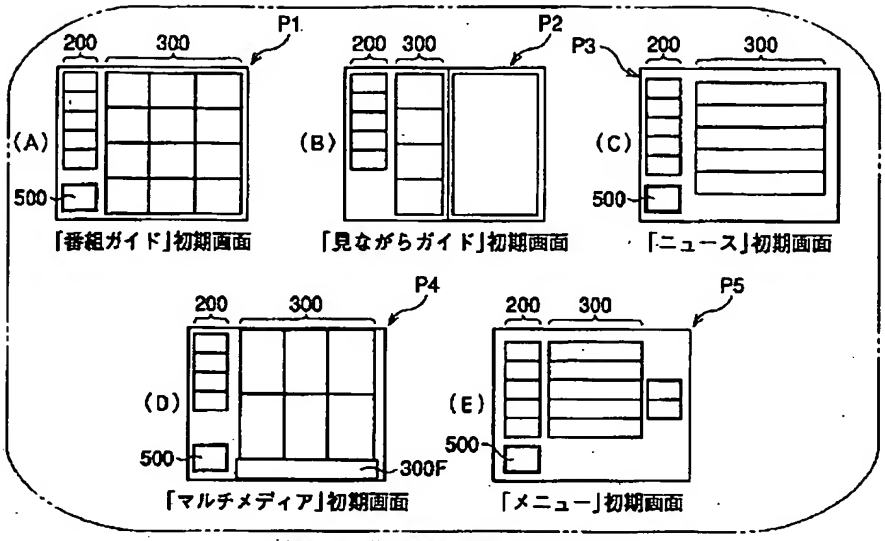


タグ名称の表記方法

[Drawing 7]

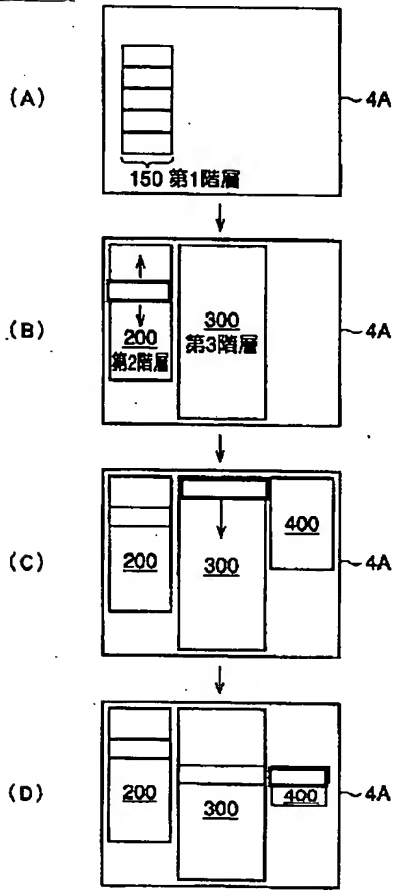

4 モニタ装置（表示手段）
SP スピーカ
4A
S Video
Composite Video
Audio L
Audio R
Y
C
28Y
28C
28V
31L
31R
10 電子機器
27
NTSC エンコーダ
25
MPEG ビデオデコーダ
25a
DRAM
26a
DRAM
D/A
30
MPEG オーディオデコーダ
26
SRAM
36
ROM
37
EEPROM
38
モデム
34
100 制御選択手段
2 IRD
5
51
IR受信部
39
35A
EPG エリア
データバッファメモリ DRAM
35
24
デマルチプレクサ
20
フロントエンド
CPU
29
フロントパネル
40
AV機器制御信号送受信部
2A
受信信号 RS
3
3a
130D 衛星
トランスポンダ
130C
130 送信装置
130A
番組送出システム
130B
MPEG2 エンコーダ/マルチプレクサ 制御システム
80
電話回線
81
プロバイダ
82
インターネット
70
デジタルカメラ
71
DVDプレーヤ
72
CDドライブ
73
デジタルビデオテープレコーダ
74
8mmビデオテープレコーダ
75
VHSビデオテープレコーダ
700 外部接続機器

[Drawing 11]

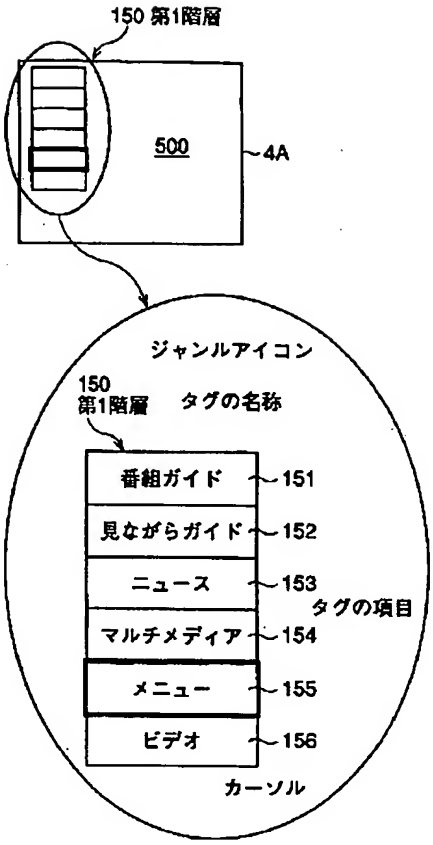


操作系の基本概念(各機能への入り方)

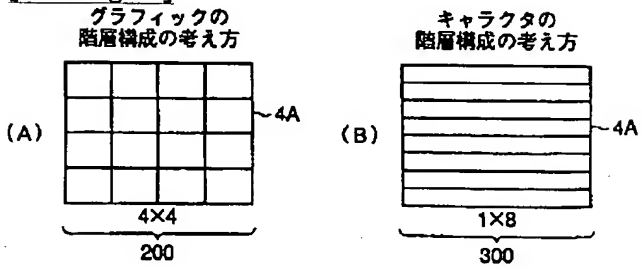
[Drawing 12]



[Drawing 13]

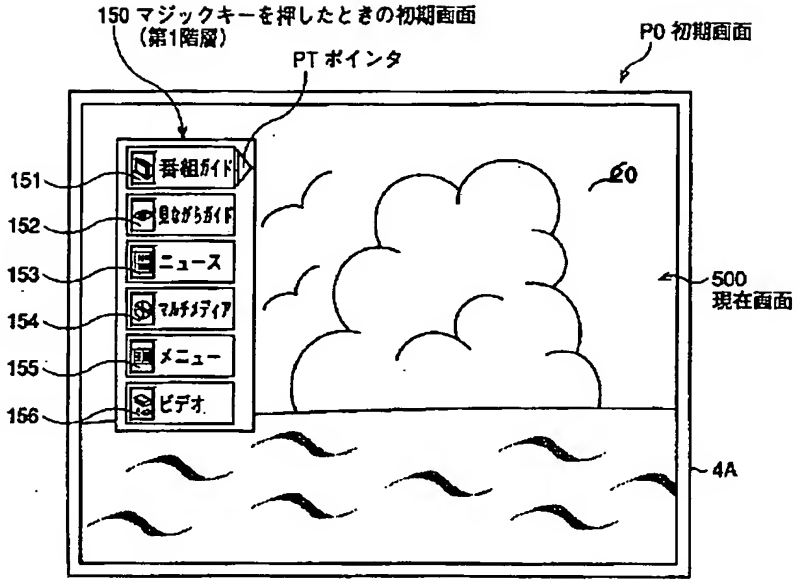


[Drawing 15]

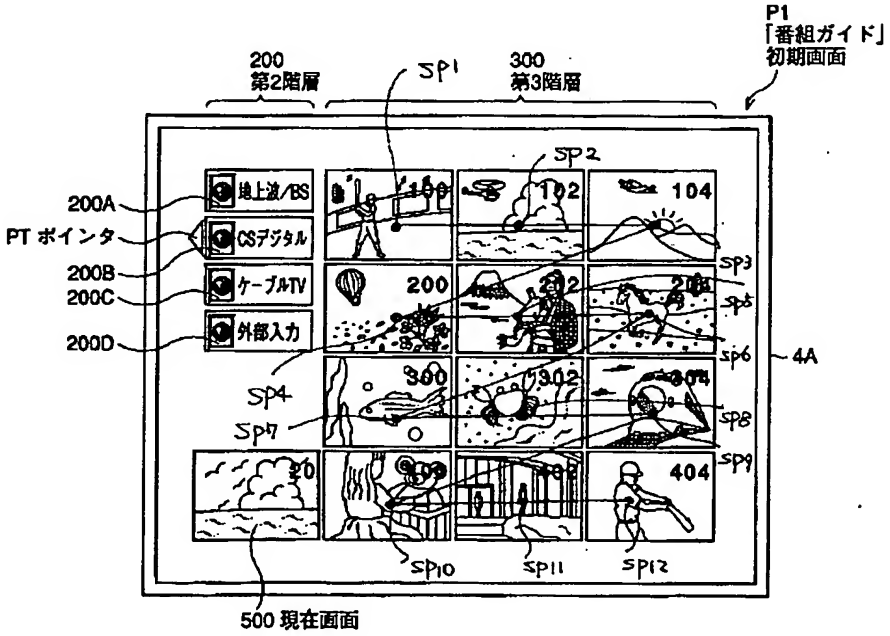


画面上の基本レイアウトの概念

[Drawing 16]



[Drawing 17]



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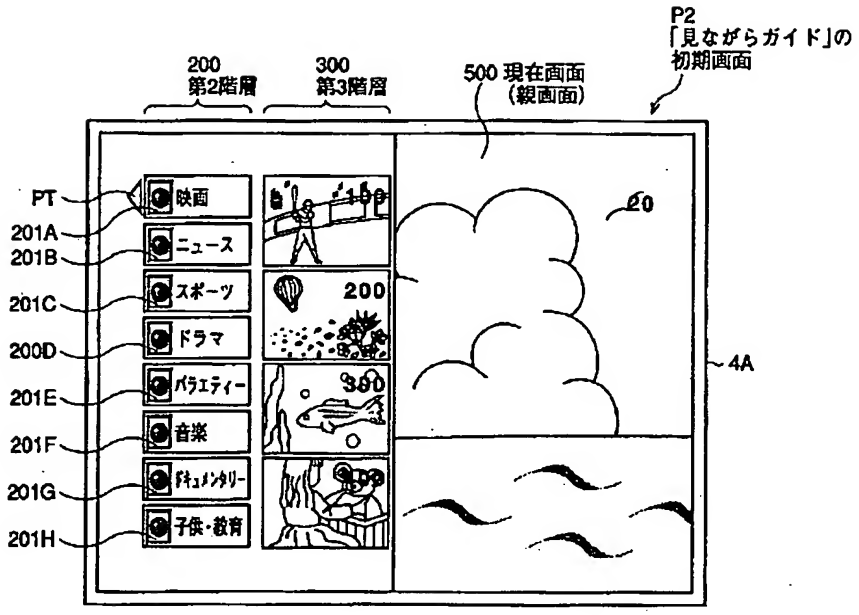

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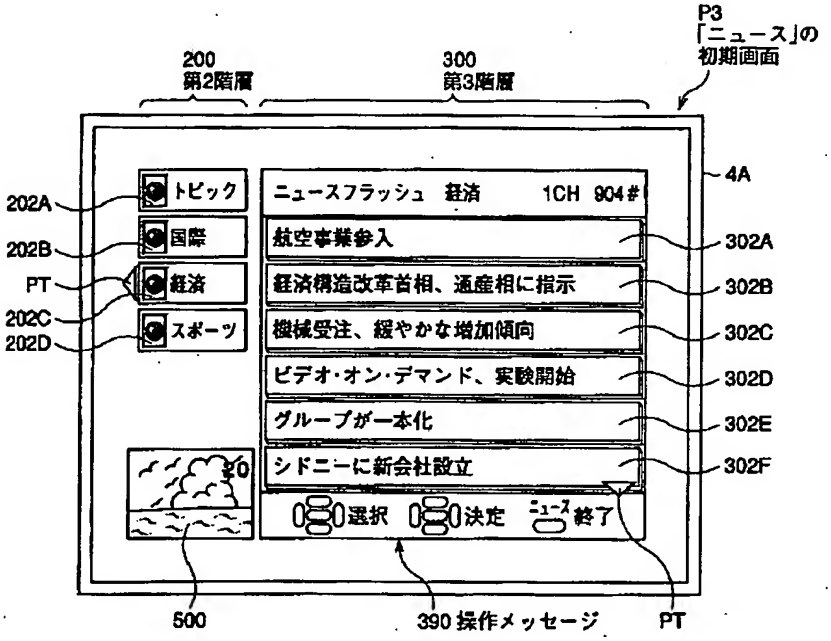
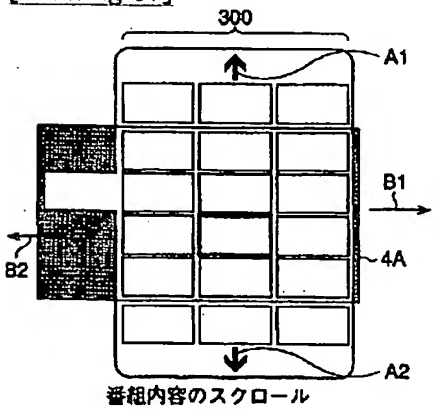


[Drawing 37]



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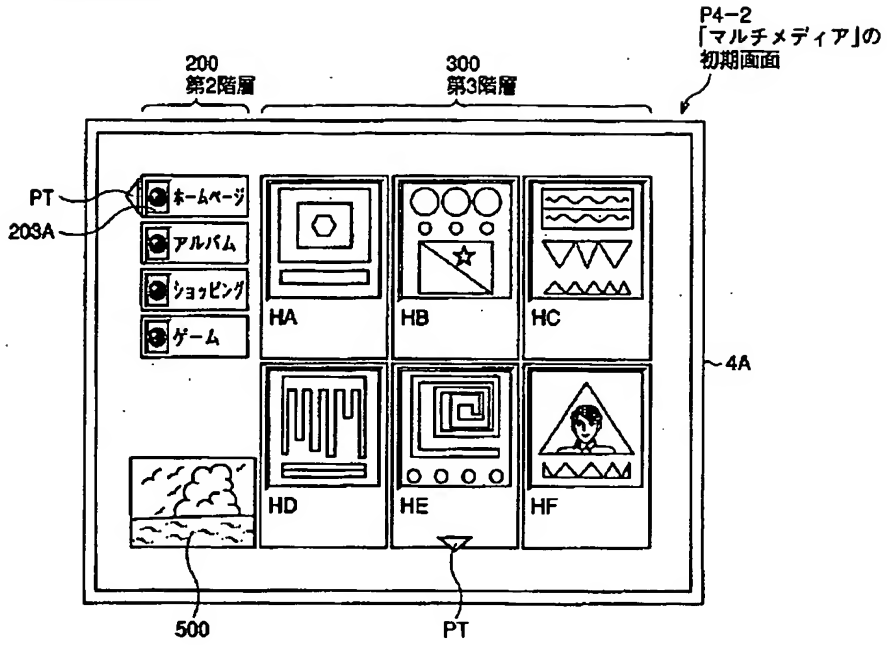

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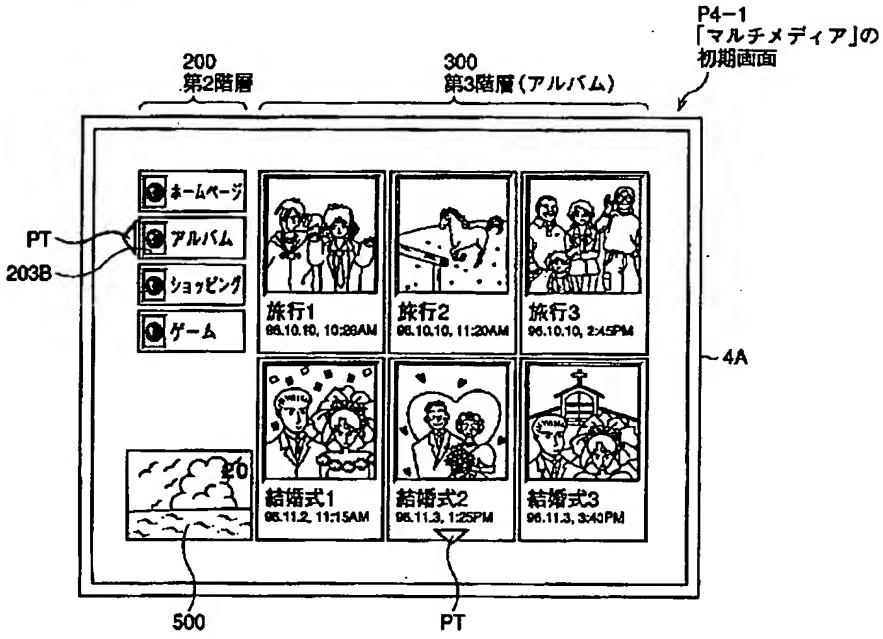
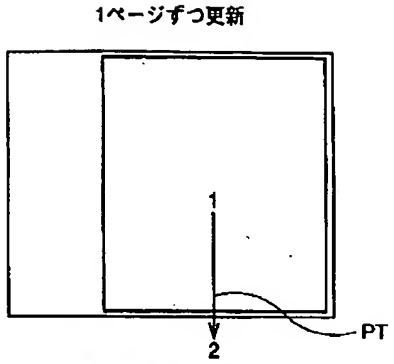
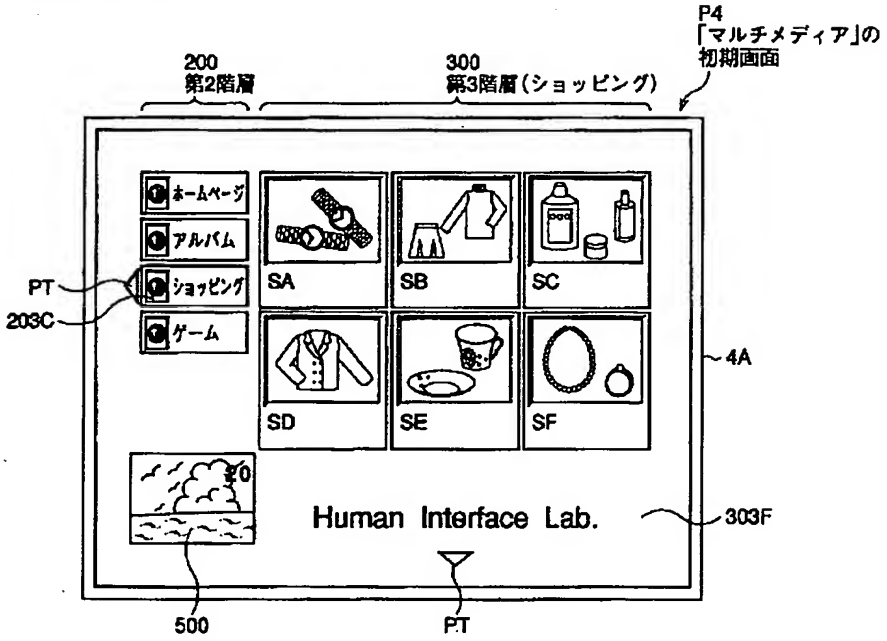


[Drawing 40]

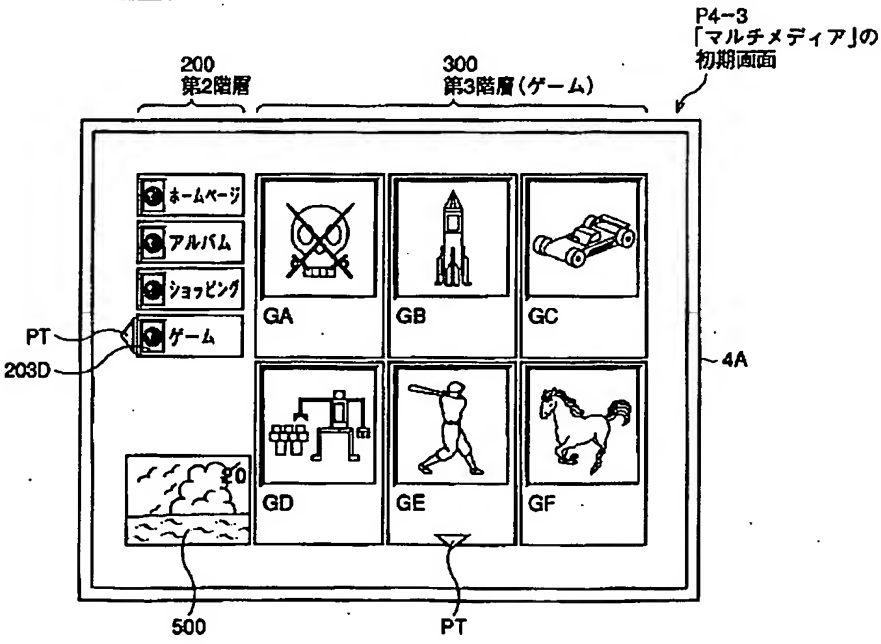


番組内容更新の考え方

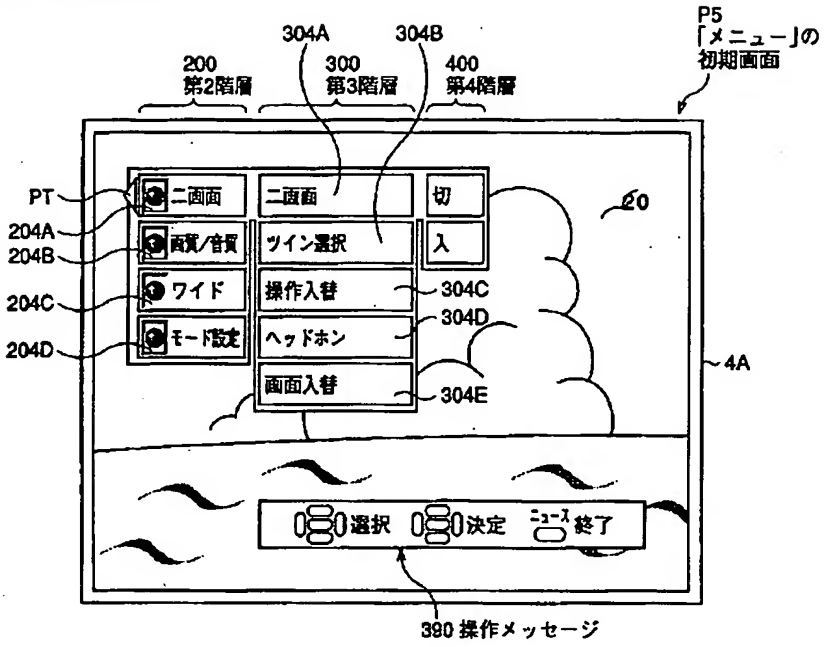
[Drawing 22]



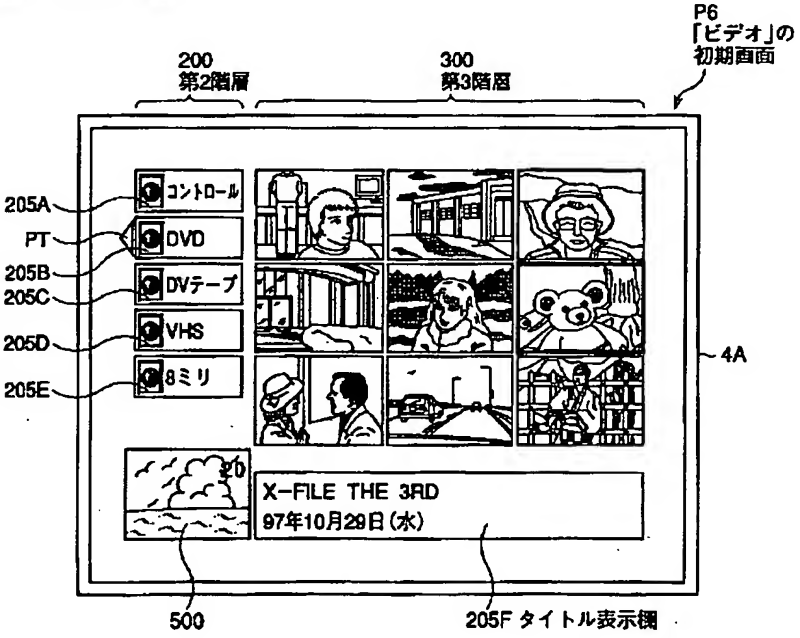
[Drawing 23]



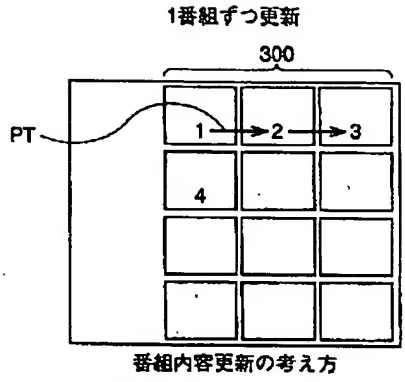
[Drawing 24]



[Drawing 25]

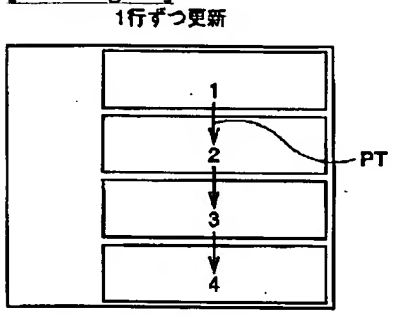


[Drawing 38]



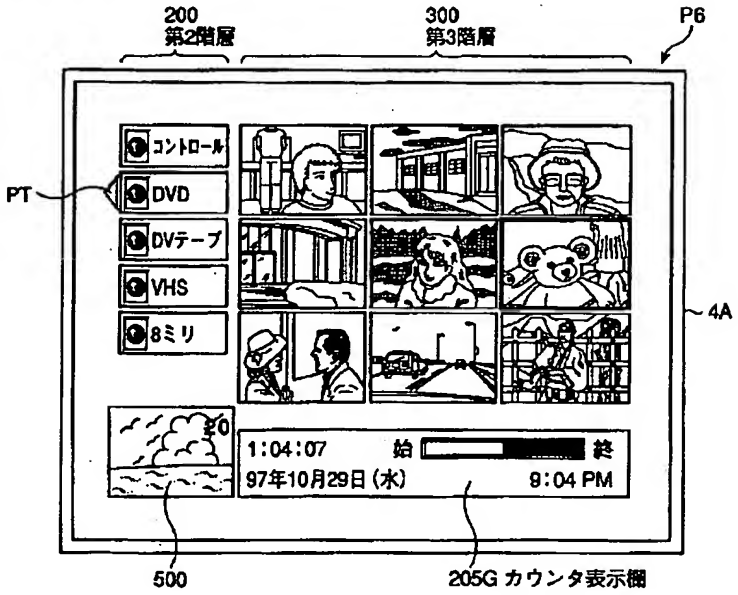
番組内容更新の考え方

[Drawing 39]

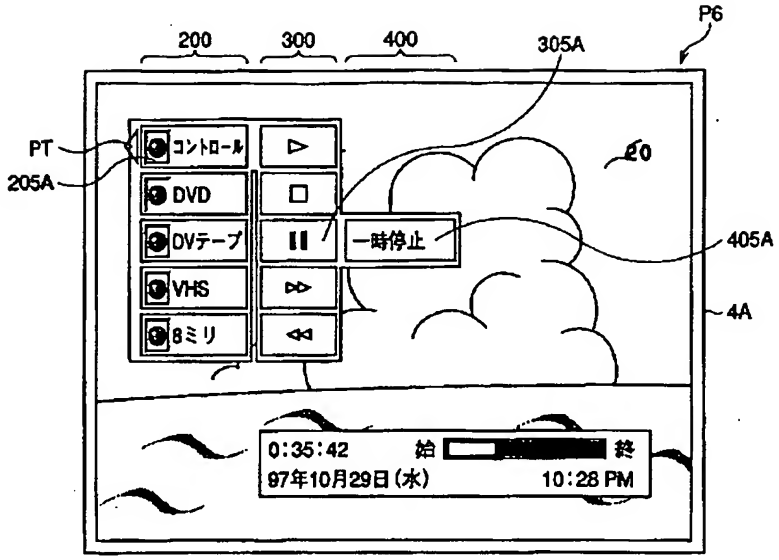


番組内容更新の考え方

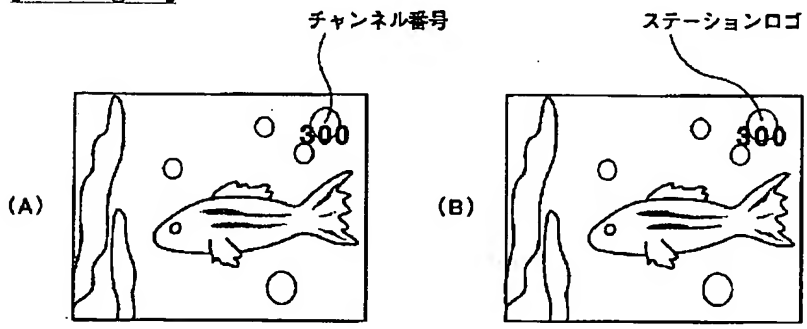
[Drawing 26]



[Drawing 27]

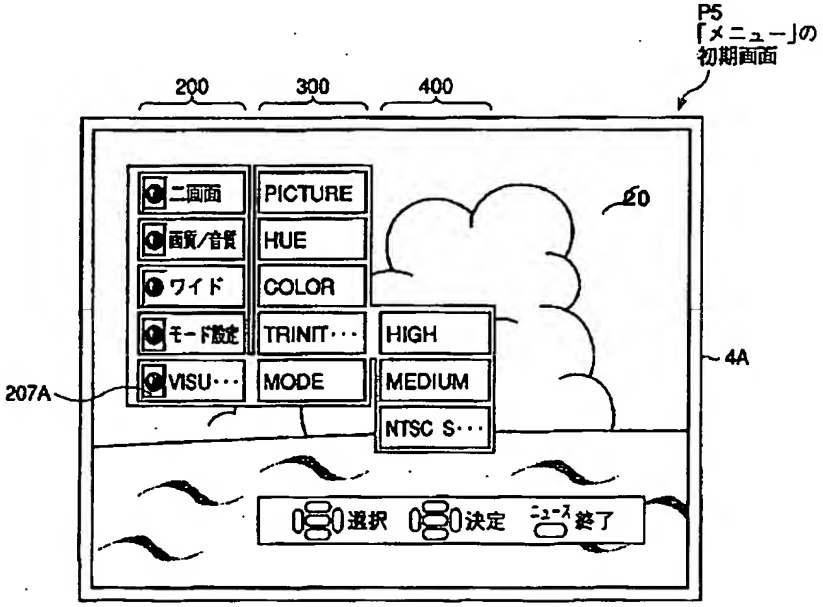


[Drawing 41]

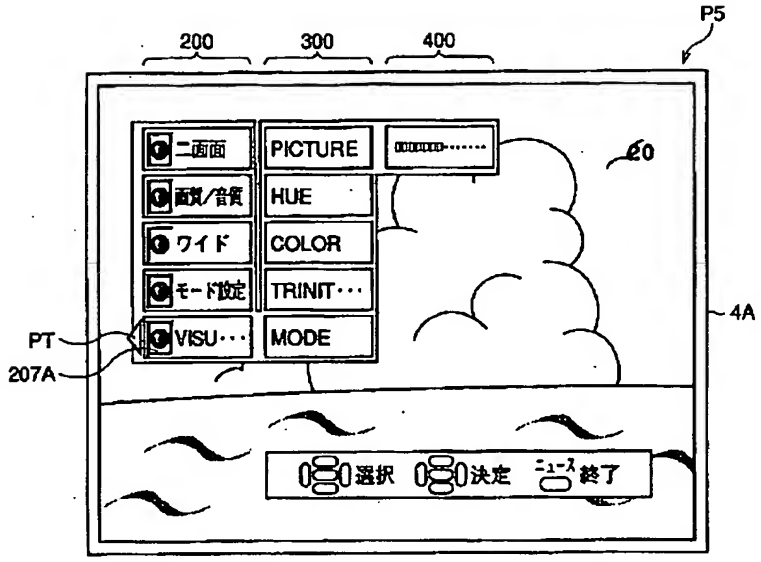


チャンネル番号とステーションロゴ

[Drawing 28]



[Drawing 29]



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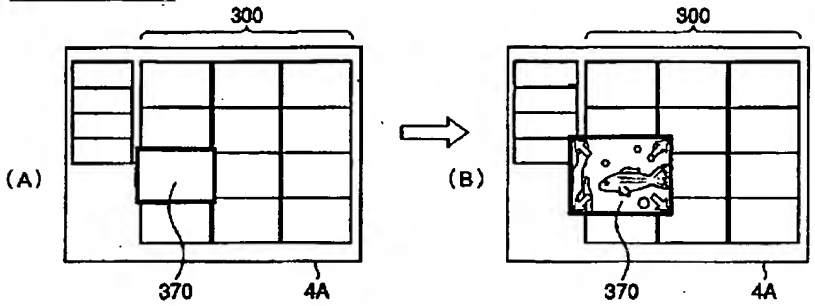
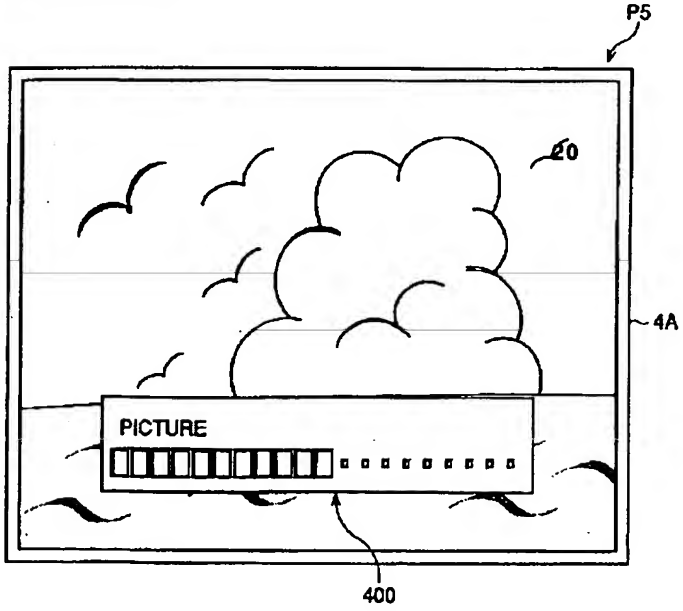
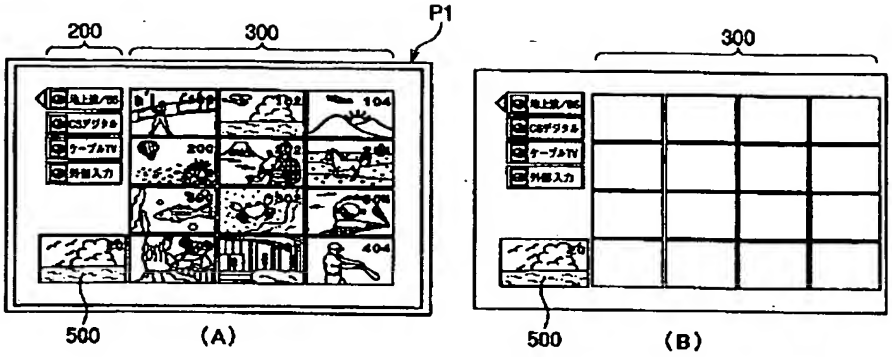


番組ガイドの仮決定の状態

[Drawing 30]

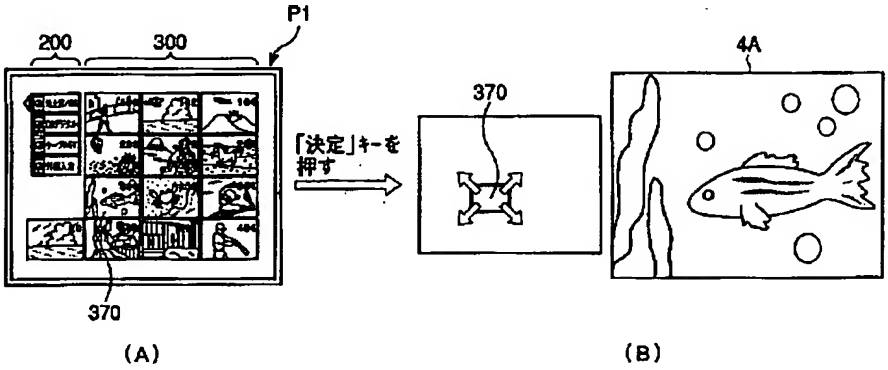


[Drawing 31]

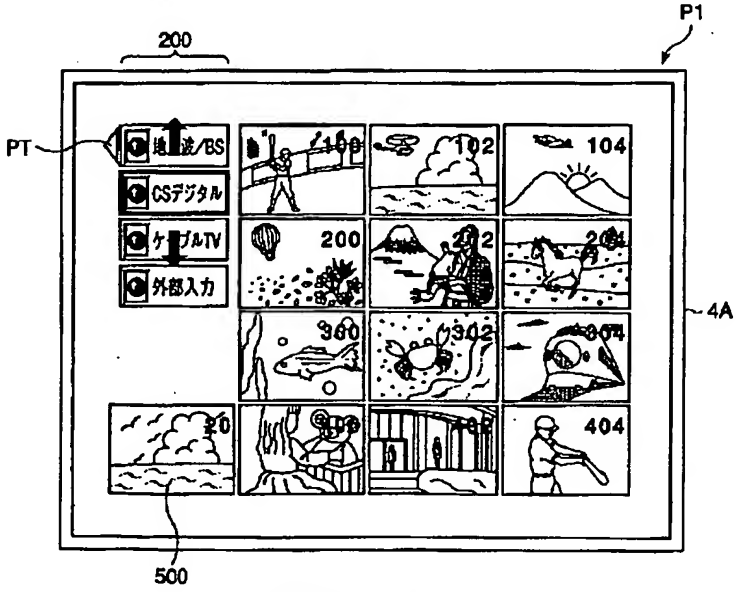


ワイド画面(16：9への対応)

[Drawing 34]

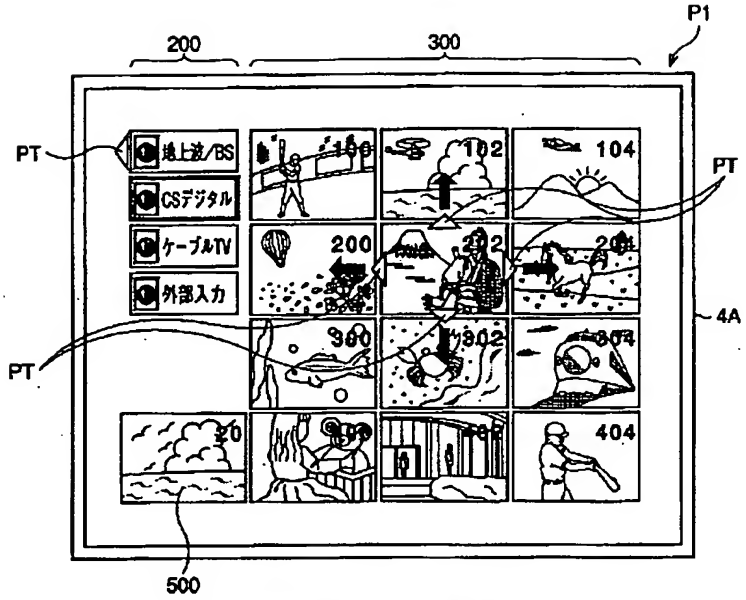


[Drawing 32]



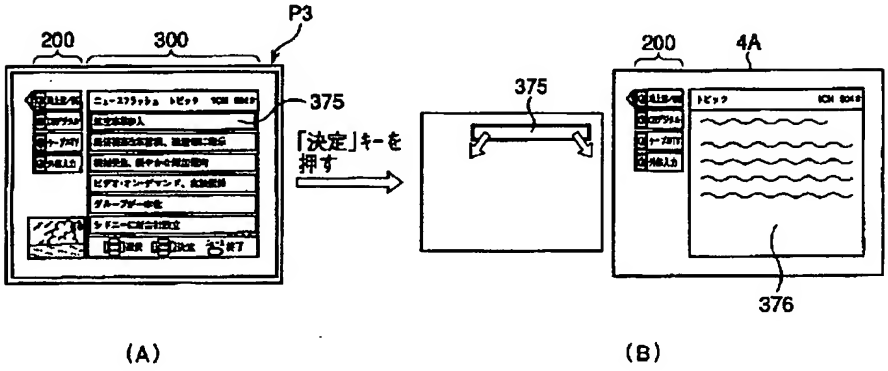
タグ項目のカーソルの動き

[Drawing 33]

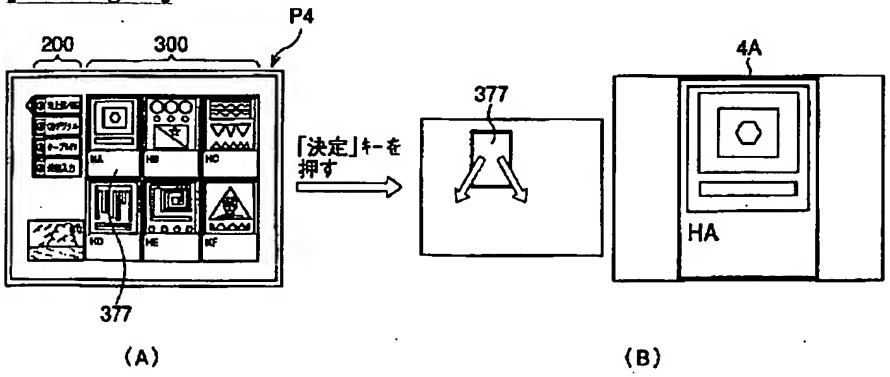


第3階層内のカーソルの動き方

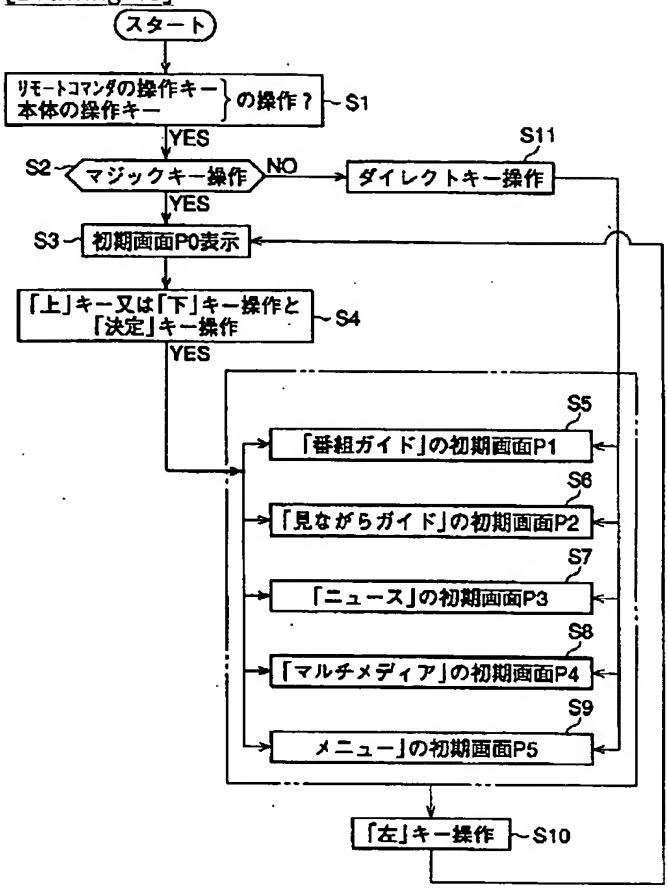
[Drawing 35]



[Drawing 36]



[Drawing 43]



[Translation done.]